SEWS 8.1.1 (1 of 4) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | | | | |
|---|-------------------------------|------------|---------|------------|--|--|
| Equipment ID No.: | Equipment Class: Batte | ries on Ra | acks | | | |
| Equipment description: | | | | | | |
| System: | | | | | | |
| Equipment Location: Bldg. | Floor El. | Room, R | ow/Co | l. | | |
| Manufacturer, model, etc.: | | | | | | |
| Battery type: | Individual Battery Weight: | | | | | |
| Drawing No.: | Performance Category: | | | | | |
| Functionality Requirement | | | | | | |
| □ Contact Lead Relay Reviewer to determine if item For components whose function or structural integr For all other components, only anchorage evaluation | rity is required, complete al | l sections | of this | form. | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | | |
| 1. Seismic Capacity based on: Reference Spectrum GERS Existing documentation 2. Elevation where equipment receives seismic input Seismic Demand Spectrum (SDS) based on: In-structure response spectrum (IRS) per DOE-STD-1020 Other in-structure response spectrum (determine appropriate experience data scale factor) Design basis earthquake (DBE) per DOE-STD-1020 Other Scale Factor (SF) Experience Data Factor (F _{ED}) | | | | | | |
| Does capacity exceed demand? | | Y N | U | | | |
| Reference: | | | | | | |
| Caveats (Section 8.1.1) | | | | | | |
| Reference Spectrum (Identify with an asterisk (*) those caveats which are met by intent without meeting the specific wording of the caveat rule and explain the reason for this conclusion in the COMMENTS section below) | | | | | | |
| Equipment is included in earthquake experience Plates of the cells are lead-calcium flat-plate, Pla Manchex design | anté or of | Y N Y N | U U | N/A N/A | | |
| Each individual battery weighs less than 450 lbs Close-fitting, crush-resistant spacers fill two-third vertical space between cells | ls of | Y N | U | N/A N/A | | |
| 5. Cells restrained by end and side rails | | Y N | U | N/A N/A | | |

SEWS 8.1.1 (2 of 4) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | |
|---|-----------------------|--------|--------|--------|-------|--|
| Equipment ID No.: | Equipment Class: Batt | eries | on Ra | cks | | |
| Equipment description: | | | | | | |
| Caveats (Cont.) | | | | | | |
| 6. Racks have longitudinal cross bracing | | Υ | N | U | N/A | |
| 7. Wood racks evaluated to industry accepted star | | Υ | Ν | U | N/A | |
| 8. Batteries greater than 10 years old specifically e for aging effects | evaluated | Υ | N | U | N/A | |
| 9. Have you looked for and found no other adverse | e concerns? | Ϋ́ | N | Ü | N/A | |
| Is the intent of all the caveats met for Reference Spectru | um? | Y | N | U | N/A | |
| GERS (Identify with an asterisk (*) those caveats which wording of the caveat rule and explain the reason for thi | | | | | | |
| Equipment is included in generic seismic testing | equipment class | Υ | N | U | N/A | |
| 2. Meets all Reference Spectrum caveats | | Υ | Ν | U | N/A | |
| 3. Plates of the cells are lead-calcium flat-plate de | sign | V | N.I | | N1/A | |
| (i.e., not Manchex design)4. Batteries supported on two-step racks or single- | tier racks: | Υ | N | U | N/A | |
| restrained by double side and end rails which located with respect to the cell center-of-gravit | are symmetrically | Υ | N | U | N/A | |
| Is the intent of all the caveats met for GERS? | | Υ | N | U | N/A | |
| Anchorage (Chapter 6) | | | | | | |
| Type of anchorage: | | | | | | |
| expansion anchor | | | | | | |
| ast-in-place bolt or headed stu | d anchor | | | | | |
| cast-in-place J-bolt | | | | | | |
| grouted-in-place bolt | | | | | | |
| welds to embedded steel on ex | posed steel | | | | | |
| lead cinch anchors | | | | | | |
| ☐ Other ☐ N/A (no further anchorage cons | iderations) | | | | | |
| _ Twitt (its returner entertage conte | adration by | | | | | |
| 2. Appropriate characteristics for anchorage type of | checked | | | | | |
| (size, location, equipment characteristics) | | Υ | Ν | U | | |
| 3. Gap at threaded anchor less than 1/4 inch | | Y | N | U | N/A | |
| 4. Base stiffness and no significant prying action re | | Y | N | U | | |
| 5. Equipment base strength and structural load pa | in adequate | Y Y | N N | U U | N/A | |
| 6. Embedment steel and pads requirements met7. Embedment length requirements met | | | N | Ü | 111/7 | |
| Anchor spacing requirements met | | Y Y | N | Ü | | |
| Edge distance requirements met | | Υ | Ν | U | | |
| 10. Concrete strength requirements met | | Υ | N | U | | |

SEWS 8.1.1 (3 of 4) Sheet 3 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | |
|---|----------------------------|------------------|-------------|-------------------|--|--|
| Equipment ID No.: | Equipment Class: Batteries | on R | acks | | | |
| Equipment description: | | | | | | |
| Anchorage (Cont.) | | | | | | |
| 11. Concrete crack requirements met 12. Equipment with essential relays requirements met 13. Installation adequacy requirements met 14. No other concerns | et Y Y Y | N N N N | U U U | N/A N/A | | |
| Does anchorage capacity exceed demand? | Υ | N | U | | | |
| Reference: | | | | | | |
| Interaction Effects (Chapter 7) | | | | | | |
| Soft targets free from impact by nearby equipme or structures | Υ | N | U | N/A | | |
| If equipment contains sensitive essential relays, from all impact by nearby equipment or structu Attached lines have adequate flexibility No collapse of overhead equipment, distribution | res Y | N N | U U | N/A N/A | | |
| or masonry walls 5. Equipment is free from credible and significant seismic-induced flood and spray concerns | Y Y | N N | | N/A N/A | | |
| 6. No credible seismic-induced fire concerns 7. No other "two over one" concerns as defined in I 8. No other concerns | Y | N N N | U | N/A N/A N/A | | |
| Is equipment free of interaction effects? | Y | N | U | 14/74 | | |
| Comments | | | | | | |
| | | | | | | |

SEWS 8.1.1 (4 of 4) Sheet 4 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | |
|--|------------------|------------------------------------|-------|--|
| Equipment ID No.: | | Equipment Class: Batter | | |
| Equipment descriptio | n: | | | |
| Comments (Cont.) | | | | |
| Screening Walkdown | (s): | | | |
| <u>Date</u> | <u>Time</u> | Team Members | | |
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| Recommend Res | solution | | | |
| ☐ Maintenance | action: | | | |
| ☐ Further evalu | uation: | | | |
| ☐ Retrofit desig | jn: | | | |
| ☐ Other: | | | _ | |
| ☐ No further ac | tion required. E | Equipment is seismically adequate. | | |
| All aspects of the equ | uipment's seism | ic adequacy have been addressed. | | |
| Evaluation by: | | | Date: | |
| (All team members) | | | | |
| | | | · ——— | |
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SEWS 8.1.2 (1 of 4) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | | | |
|---|--|---------|--------|---------------------------------|--|
| Equipment ID No.: | Equipment Class: Motor | Control | Center | s | |
| Equipment description: | | | | | |
| Equipment Location: Bldg. | Floor El. | Room, R | ow/Co | l. | |
| Manufacturer, model, etc.: | | | | | |
| Weight of each Cabinet: | | | | | |
| Drawing No.: | Performance Category: | | | | |
| Functionality Requirement | | | | | |
| ☐ For components whose function or structural integr | Contact Lead Relay Reviewer to determine if item contains Essential Relays For components whose function or structural integrity is required, complete all sections of this form. | | | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | |
| 1. Seismic Capacity based on: Reference Spectrum | | | | | |
| Caveats (Section 8.1.2) | | | | | |
| Reference Spectrum (Identify with an asterisk (*) the meeting the specific wording of the caveat rule and explain COMMENTS section below) 1. Equipment is included in earthquake experience 2. 600 V rating or less 3. Adjacent cabinets which are close enough to improfine of multi-bay cabinets, are bolted together if the essential relays 4. Attached weight (except conduit) less than about cabinet assembly 5. Externally attached items rigidly anchored | equipment class pact, or sections y contain t 100 lbs per | | | N/A N/A N/A N/A N/A | |

SEWS 8.1.2 (2 of 4) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | |
|--|--|--------|----------|--------|-------|--|
| Equipment ID No.: | Equipment ID No.: Equipment Class: Motor Control Centers | | | | | |
| Equipment description: | | | | | | |
| Caveats (Cont.) | | | | | | |
| 6. General configuration similar to NEMA standar | | Y | N | U | N/A | |
| 7. Cutouts in lower half less than 6 in. wide and 1. | 2 in. high | Y | N | U | N/A | |
| 8. All doors secured by latch or fastener | | Y | N | U | N/A | |
| Have you looked for and found no other advers | e concerns? | Υ | N | U | N/A | |
| Is the intent of all the caveats met for Reference Spectr | um? | Υ | N | U | N/A | |
| GERS (Identify with an asterisk (*) those caveats which | h are met by intent withou | t meet | ting the | e spec | ific | |
| wording of the caveat rule and explain the reason for the | | | | | | |
| Equipment is included in generic seismic testin | g equipment class | Υ | Ν | U | N/A | |
| 2. Meets all Reference Spectrum caveats | | Υ | Ν | U | N/A | |
| 3. Floor-mounted cabinet | | Υ | Ν | U | N/A | |
| 4. Average weight per section less than 800 poun | ds | Υ | Ν | U | N/A | |
| 5. Base anchorage utilizing MCC base channels | | Υ | Ν | U | N/A | |
| 6. Adequate strength and stiffness in load transfe | | | | | | |
| anchorage to base frame (only for "function a | | Υ | Ν | U | N/A | |
| 7. Essential relays have GERS > 4.5g (only for "fu | inction | | ., | | | |
| during" GERS) | (FDO) | | Y | N | U N/A | |
| 8. Able to reset starters (only for "function after" G | | Υ | N | U | N/A | |
| 9. Adjacent cabinets which are close enough to impact, or sections of | | | N | U | N/A | |
| multi-bay cabinets, are bolted together. | | Υ | IN | U | IN/A | |
| Is the intent of all the caveats met for GERS? | | Υ | N | U | N/A | |
| Anchorage (Chapter 6) | | | | | | |
| Type of anchorage: | | | | | | |
| expansion anchor | | | | | | |
| □ cast-in-place bolt or headed st | ud anchor | | | | | |
| cast-in-place J-bolt | | | | | | |
| grouted-in-place bolt | | | | | | |
| welds to embedded steel on ex | posed steel | | | | | |
| ☐ lead cinch anchors | ,, | | | | | |
| Other | | | | | | |
| N/A (no further anchorage con | siderations) | | | | | |
| | | | | | | |
| 2. Appropriate characteristics for anchorage type | checked | V | | | | |
| (size, location, equipment characteristics) | | Y | N | U | N1/A | |
| 3. Gap at threaded anchor less than 1/4 inch | | Y Y | N | U | N/A | |
| 4. Base stiffness and no significant prying action requirements met | | | N | U | | |
| 5. Equipment base strength and structural load path adequate | | | N | U | NI/A | |
| 6. Embedment steel and pads requirements met | | Y Y | N | U | N/A | |
| 7. Embedment length requirements met | | Υ Υ | N N | U U | | |
| 8. Anchor spacing requirements met9. Edge distance requirements met | | Ϋ́Υ | N | U | | |
| Concrete strength requirements met | | Ϋ́ | N | U | | |
| 1 IN U | | | | | | |

SEWS 8.1.2 (3 of 4) Sheet 3 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | |
|---|------------------------------|-------------|--------|--------------------------|--|--|--|
| Equipment ID No.: Equipment Class: Motor Control Centers | | | | | | | |
| Equipment description: | | | | | | | |
| Anchorage (Cont.) | | | | | | | |
| 11. Concrete crack requirements met 12. Equipment with essential relays requirements met 13. Installation adequacy requirements met 14. No other concerns Does anchorage capacity exceed demand? Reference: | Y Y | X | U U U | N/A N/A | | | |
| Interaction Effects (Chapter 7) | | | | | | | |
| Soft targets free from impact by nearby equipmer or structures If equipment contains sensitive essential relays, each of the structure of the structur | Υ | N | U | N/A | | | |
| from all impact by nearby equipment or structur 3. Attached lines have adequate flexibility 4. No collapse of overhead equipment, distribution s | es Y Y | N N | U U | N/A N/A | | | |
| or masonry walls 5. Equipment is free from credible and significant | Υ | N | | N/A | | | |
| seismic-induced flood and spray concerns 6. No credible seismic-induced fire concerns 7. No other "two over one" concerns as defined in D 8. No other concerns | Y Y OE-STD-1021 Y Y | N N N | U | N/A N/A N/A N/A | | | |
| Is equipment free of interaction effects? | Y | N | U | | | | |
| Comments | | | | | | | |
| | | | | | | | |

SEWS 8.1.2 (4 of 4) Sheet 4 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|--|-------------------|-------------------|--|--|--|
| Equip | ment ID No.: | | Equipment Class: Motor Control Centers | | |
| Equipn | nent description: | | | | |
| Comi | ments (Cont.) | | | | |
| Screer | ning Walkdown(s | s): | | | |
| | <u>Date</u> | <u>Time</u> | Team Members | | |
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| Reco | mmend Reso | olution | | | |
| | Maintenance a | ction: | | | |
| | Further evaluat | tion: | | | |
| | Retrofit design: | : | | | |
| | Other: | | | | |
| | No further action | on required. Equ | uipment is seismically adequate. | | |
| All asp | ects of the equip | oment's seismic a | adequacy have been addressed. | | |
| Evalua | ntion by: | | Date: | | |
| | am members) _ | | | | |
| | - | | <u> </u> | | |
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SEWS 8.1.3 (1 of 4) Sheet 1 of _____

| SCREENING EVALUATION | N WORK SHEET (SEW | /S) | | | | | | |
|---|-------------------------------|------------|---------|------------|--|--|--|--|
| Equipment ID No.: | Equipment Class: Low- | Voltage S | witch | gear | | | | |
| Equipment description: | | | | | | | | |
| Equipment Location: Bldg. | Floor El. | Room, F | Row/Co | ol. | | | | |
| Manufacturer, model, etc.: | | | | | | | | |
| Weight of each Cabinet: | Weight of each Cabinet: | | | | | | | |
| Drawing No.: | Performance Category: | | | | | | | |
| Functionality Requirement | | | | | | | | |
| Contact Lead Relay Reviewer to determine if item For components whose function or structural integ For all other components, only anchorage evaluation | rity is required, complete al | l sections | of this | form. | | | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | | | | |
| 1. Seismic Capacity based on: Reference Spectrum GERS Existing documentation 2. Elevation where equipment receives seismic input | | | | | | | | |
| Does capacity exceed demand? | | Y N | U | | | | | |
| Reference: | | | | | | | | |
| Caveats (Section 8.1.3) | | | | | | | | |
| Reference Spectrum (Identify with an asterisk (*) those caveats which are met by intent without meeting the specific wording of the caveat rule and explain the reason for this conclusion in the COMMENTS section below) | | | | | | | | |
| Equipment is included in earthquake experience | equipment class | Y N | U | N/A | | | | |
| 2. 600 V rating or less | | Y N | U | N/A | | | | |
| 3. Side-to-side restraint of draw-out circuit breakers is provided Y N U N/A | | | | | | | | |
| Adjacent cabinets which are close enough to immulti-bay cabinets, are bolted together if they | contain essential relays | Y N | U | N/A | | | | |
| 5. Attached weight (except conduit) less than abou | | V N | | N1/A | | | | |
| assembly 6. Externally attached items rigidly anchored | | Y N Y N | U U | N/A N/A | | | | |
| Externally attached items rigidly anchored General configuration similar to ANSI C37.20 sta | | Y N | U | N/A N/A | | | | |

SEWS 8.1.3 (2 of 4) Sheet 2 of _____

| | SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|---|--|-------------------|--------|--------|------------|--|
| Equip | ement ID No.: Equipment (| Class: Low-Volta | age S | witch | gear | |
| Equip | ment description: | | | | | |
| Cave | eats (Cont.) | | | | | |
| 8. | Cutouts in lower half of cabinet side sheathing less than 30% of width of side panel wide and less than 60% of width of side p | | | | | |
| | excluding bus transfer compartment | Υ | Ν | U | N/A | |
| 9. | All doors secured by latch or fastener | Υ | Ν | Ū | N/A | |
| 10. | Have you looked for and found no other adverse concerns? | Y | N | Ü | N/A | |
| Is the | intent of all the caveats met for Reference Spectrum? | Υ | N | U | N/A | |
| GER | ${\cal S}$ (Identify with an asterisk (*) those caveats which are met by int | tent without meet | ing th | e spec | ific | |
| | ng of the caveat rule and explain the reason for this conclusion in | | secti | | | |
| 1. | Equipment is included in generic seismic testing equipment cla | | N | U | N/A | |
| 2. | Meets all Reference Spectrum caveats | Y | N | U | N/A | |
| 3. | Floor-mounted enclosure | Υ | N | U | N/A | |
| 4. | Manufactured by major vendor (ITE/Brown Boveri, Westinghou | ise, Y | N.I | | NI/A | |
| 5. | or GE) Average weight per section less than 1,600 lbs | Ϋ́Υ | N N | U U | N/A N/A | |
| 6. | For 2.5g level GERS, vertical restraint prevents breaker uplift | Y | N | U | N/A N/A | |
| 7. | For 2.5g level GERS, outside corners of end units are | ' | IN | U | IN/ / | |
| ′. | reinforced, if needed | Υ | Ν | U | N/A | |
| 8. Adjacent cabinets which are close enough to impact, or sections of | | | | | , . | |
| multi-bay cabinets, are bolted together | | | Ν | U | N/A | |
| Is the | Υ | N | U | N/A | | |
| 4 = 0 | | | | | | |
| | norage (Chapter 6) | | | | | |
| 1. | Type of anchorage: | | | | | |
| | expansion anchor | | | | | |
| | cast-in-place bolt or headed stud anchor | | | | | |
| | cast-in-place J-bolt | | | | | |
| | grouted-in-place bolt | | | | | |
| | welds to embedded steel on exposed steel | | | | | |
| | lead cinch anchors | | | | | |
| | Other | | | | | |
| | N/A (no further anchorage considerations) | | | | | |
| 2. | Appropriate characteristics for anchorage type checked | | | | | |
| | (size, location, equipment characteristics) | Υ | Ν | U | | |
| 3. | Gap at threaded anchor less than 1/4 inch | Ý | N | Ü | N/A | |
| 4. | Base stiffness and no significant prying action requirements me | | N | Ü | 14// (| |
| 5. | Equipment base strength and structural load path adequate | Y | N | Ü | | |
| 6. | Embedment steel and pads requirements met | Ϋ́ | N | Ü | N/A | |
| 7. | Embedment length requirements met | Ý | N | Ü | . 4/1 | |
| 8. | Anchor spacing requirements met | Ý | N | Ü | | |
| 9. | Edge distance requirements met | Y | N | Ü | | |
| 10. | Concrete strength requirements met | Ý | N | Ü | | |
| | | | | | | |

SEWS 8.1.3 (3 of 4) Sheet 3 of _____

| SCREENING EVALUATION WO | ORK SHEET (SEWS) (C | ont.) | | |
|--|-------------------------|--------|-------------|-------------------|
| Equipment ID No.: | Equipment Class: Low-Vo | | witch | gear |
| Equipment description: | | | | |
| Anchorage (Cont.) | | | | |
| 11. Concrete crack requirements met 12. Equipment with essential relays requirements met 13. Installation adequacy requirements met 14. No other concerns | et Y Y Y | N N | U U U | N/A N/A |
| Does anchorage capacity exceed demand? | Y | | U | |
| Reference: | | | | |
| Interaction Effects (Chapter 7) | | | | |
| Soft targets free from impact by nearby equipme or structures If equipment contains sensitive essential relays, | Υ | N | U | N/A |
| from all impact by nearby equipment or structu 3. Attached lines have adequate flexibility 4. No collapse of overhead equipment, distribution | res Y Y | | U | N/A N/A |
| or masonry walls 5. Equipment is free from credible and significant seismic-induced flood and spray concerns | Y | | | N/A N/A |
| No credible seismic-induced fire concerns No other "two over one" concerns as defined in E No other concerns | OOE-STD-1021 Y Y | N | U | N/A N/A N/A |
| Is equipment free of interaction effects? | Y | N | U | |
| Comments | | | | |
| | | | | |

SEWS 8.1.3 (4 of 4) Sheet 4 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | |
|--|-------------------|-------------|-------------------------|------------------------------|------------|--|--|
| Equip | ment ID No.: | | | Equipment Class: Low-Voltage | Switchgear | | |
| Equipn | ment description | : | | | | | |
| Comi | Comments (Cont.) | | | | | | |
| Screer | ning Walkdown(s | s): | | | | | |
| | <u>Date</u> | <u>Time</u> | Team Members | | | | |
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| Reco | mmend Rese | olution | | | | | |
| | Maintenance a | action: | | | | | |
| | Further evalua | ition: | | | | | |
| | Retrofit design | n: _ | | | | | |
| | Other: | _ | | | | | |
| | No further action | on required | d. Equipment is seismic | cally adequate. | | | |
| All asp | ects of the equir | oment's se | ismic adequacy have be | een addressed. | | | |
| | ation by: | | | | ate: | | |
| | am members) | | | | ite | | |
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SEWS 8.1.4 (1 of 4) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | | | |
|--|---|------------|---------|------------|--|
| Equipment ID No.: | Equipment Class: Medium-Voltage Switchgea | | | | |
| Equipment description: | | _ | | | |
| Equipment Location: Bldg. | Floor El. | Room, F | Row/Co | ol. | |
| Manufacturer, model, etc.: | | | | | |
| Weight of each cabinet: | | | | | |
| Drawing No.: | Performance Category: | | | | |
| Functionality Requirement | | | | | |
| Contact Lead Relay Reviewer to determine if item of For components whose function or structural integrit For all other components, only anchorage evaluation | ity is required, complete al | l sections | of this | form. | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | |
| 1. Seismic Capacity based on: Reference Spectrum GERS Existing documentation 2. Elevation where equipment receives seismic input Seismic Demand Spectrum (SDS) based on: In-structure response spectrum (IRS) per DOE-STD-1020 Other in-structure response spectrum (determine appropriate experience data scale factor) Design basis earthquake (DBE) per DOE-STD-1020 Other Scale Factor (SF) Experience Data Factor (F _{ED}) Does capacity exceed demand? Reference: | | | | | |
| Caveats (Section 8.1.4) | | | | | |
| Reference Spectrum (Identify with an asterisk (*) the meeting the specific wording of the caveat rule and explain COMMENTS section below) | | | | t | |
| Equipment is included in earthquake experience of 2. 2.4 kV to 4.16 kV rating Internally mounted potential and/or control power | | Y N Y N | U U | N/A N/A | |
| restrained to prevent damage to or disconnection 4. Adjacent cabinets which are close enough to imp | on of contacts act, or sections of | Y N | U | N/A | |
| | 100 lbs per | Y N | U | N/A | |
| | | | | N/A | |

SEWS 8.1.4 (2 of 4) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|--|---------------------|--------|--------|--------|---------|
| Equipment ID No.: | Equipment Class: M | edium- | Voltag | je Swi | tchgear |
| Equipment description: | | | | | |
| Caveats (Cont.) | | | | | |
| General configuration similar to ANSI C37.20 sta Cutouts in lower half of cabinet side sheathing le width of side panel wide and less than 60% of | ess than 30% of | Y | N | U | N/A |
| excluding bus transfer compartment | main or oldo pariol | Υ | Ν | U | N/A |
| All doors secured by latch or fastener | | Υ | Ν | U | N/A |
| 10. Have you looked for and found no other adverse | concerns? | Υ | N | U | N/A |
| Is the intent of all the caveats met for Reference Spectru | m? | Υ | N | U | N/A |
| GERS (Identify with an asterisk (*) those caveats which | | | | | |
| wording of the caveat rule and explain the reason for this | | | | | |
| Equipment is included in generic seismic testing | equipment class | Y | N | U | N/A |
| Meets all Reference Spectrum caveats | | Y | N | U | N/A |
| 3. Floor-mounted enclosure | | Y | N | U | N/A |
| 4. The switchgear is not a specially-designed type | auautiaal lift | Y | N | U | N/A |
| 5. Circuit breakers are truck-mounted type, not jack | | Y | N | U | N/A |
| 6. Average weight per vertical section less than 5,0 | | Y | N | U | N/A |
| For 2.5g level GERS, vertical restraint prevents For 2.5g level GERS, circuit break arc chutes are | | Υ | N | U | N/A |
| horizontally | | Υ | Ν | U | N/A |
| For 2.5g level GERS, a Beaver Type Z relay is n Westinghouse MV switchgear for the "Y" anti-r | | Υ | N | U | N/A |
| 10. Separate evaluation of breaker racking mechani | sm completed; | | 11 | | 13/73 |
| seismic positioner or sufficient side-to-side res | | Υ | Ν | U | N/A |
| 11. Adjacent cabinets which are close enough to imp | | Υ | N | U | N/A |
| or sections of multi-bay cabinets, are bolted to | gether | | | | |
| Is the intent of all the caveats met for GERS? | | Υ | N | U | N/A |
| Anchorage (Chapter 6) | | | | | |
| | | | | | |
| Type of anchorage: | | | | | |
| expansion anchor | | | | | |
| cast-in-place bolt or headed student | d anchor | | | | |
| cast-in-place J-bolt | | | | | |
| grouted-in-place bolt | | | | | |
| welds to embedded steel on exp | osed steel | | | | |
| ☐ lead cinch anchors | | | | | |
| Other | | | | | |
| N/A (no further anchorage cons | derations) | | | | |
| Appropriate characteristics for anchorage type c | hackad | | | | |
| Appropriate characteristics for anchorage type c (size, location, equipment characteristics) | HEUNEU | Υ | N | U | |
| (oizo, ioodilon, equipment endidetenstics) | | ' | . 4 | 5 | |

SEWS 8.1.4 (3 of 4) Sheet 3 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | | | |
|--|---|----------------|--------|--------|--------|------------|--|--|--|
| Equipment ID No.: Equipment Class: Medium-Voltage Switch | | | | | | tchgear | | | |
| Equipment description: | | | | | | | | | |
| Anch | orage (Cont.) | | | | | | | | |
| 3. | Gap at threaded anchor less than 1/4 inch | | Υ | N | U | N/A | | | |
| 4. | Base stiffness and no significant prying action re- | | Υ | Ν | U | | | | |
| 5. | Equipment base strength and structural load path | n adequate | Υ | N | U | | | | |
| 6. | Embedment steel and pads requirements met | | Y | N | U | N/A | | | |
| 7. | Embedment length requirements met | | Y | N | U | | | | |
| 8. | Anchor spacing requirements met | | Y | N | U | | | | |
| 9. | Edge distance requirements met | | Y | N | U | | | | |
| 10. | Concrete strength requirements met | | Y | N | U | | | | |
| 11. 12. | Concrete crack requirements met Equipment with essential relays requirements me | \ 4 | Y Y | N | U | N/A | | | |
| 13. | Installation adequacy requirements met |) l | Ϋ́ | N N | U U | N/A N/A | | | |
| 14. | No other concerns | | Ϋ́ | N | U | IN/A | | | |
| 14. | No other concerns | | 1 | IN | U | | | | |
| Does a | inchorage capacity exceed demand? | | Υ | Ν | U | | | | |
| Refere | nce: | | | | | | | | |
| | | | | | | | | | |
| Intera | action Effects (Chapter 7) | | | | | | | | |
| 1. | Soft targets free from impact by nearby equipme | nt | | | | | | | |
| '' | or structures | , it | Υ | Ν | U | N/A | | | |
| 2. | If equipment contains sensitive essential relays, | equipment free | • | ., | Ū | 14/71 | | | |
| | from all impact by nearby equipment or structu | | Υ | Ν | U | N/A | | | |
| 3. | Attached lines have adequate flexibility | | Ϋ́ | N | Ü | N/A | | | |
| 4. | No collapse of overhead equipment, distribution | systems. | • | | | | | | |
| | or masonry walls | -,, | Υ | Ν | U | N/A | | | |
| 5. | Equipment is free from credible and significant | | | | _ | | | | |
| | seismic-induced flood and spray concerns | | Υ | Ν | U | N/A | | | |
| 6. | No credible seismic-induced fire concerns | | Υ | Ν | Ū | N/A | | | |
| 7. | No other "two over one" concerns as defined in D | OE-STD-1021 | Υ | Ν | | N/A | | | |
| 8. | No other concerns | | Υ | Ν | U | N/A | | | |
| ls equi | pment free of interaction effects? | | Υ | N | U | | | | |
| | | | • | | | | | | |
| Comr | ments | | | | | | | | |
| | | | | | | | | | |
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SEWS 8.1.4 (4 of 4) Sheet 4 of _____

| | SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|--|--|-----------------|--------------------|-----------------|-------|-------------|
| Equipment ID No.: Equipment Class: Medium-Voltage Switch | | | witchgear | | | |
| Equipm | nent description | : | | | | |
| Comr | nents (Cont.) | | | | | |
| Screen | ing Walkdown(| s): | | | | |
| | <u>Date</u> | <u>Time</u> | Team Members | | | |
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| Reco | mmend Res | olution | | | | |
| | Maintenance a | action: | | | | |
| | | | | | | |
| | Further evalua | ation: | | | | |
| | Retrofit design | n: | | | | |
| | Other: | | | | | |
| | No further acti | on required. Eq | uipment is seismic | cally adequate. | | |
| All aspe | ects of the equi | pment's seismic | adequacy have be | een addressed. | | |
| Evaluat | tion by: | | | | Date: | |
| (All tea | m members) | | | | | |
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SEWS 8.1.5 (1 of 4) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | | | | | |
|--|---|------------|---------|------------|--|--|--|
| Equipment ID No.: | Equipment Class: Distri | bution Pa | nels | | | | |
| Equipment description: | | | | | | | |
| System: | | | | | | | |
| Equipment Location: Bldg. | Floor El. | Room, R | Row/Co | l. | | | |
| Manufacturer, model, etc.: | | | | | | | |
| Weight of each Panel: | | | | | | | |
| Wall mounted: | Floor mounted: | | | | | | |
| Drawing No.: | Performance Category: | | | | | | |
| Functionality Requirement | | | | | | | |
| Contact Lead Relay Reviewer to determine if item For components whose function or structural integ For all other components, only anchorage evaluation | rity is required, complete al | l sections | of this | form. | | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | | | |
| Seismic Demand Spectrum (SDS) based on: In-structure response spectrum Other in-structure response spe scale factor) Design basis earthquake (DBE) Other | 1. Seismic Capacity based on: Reference Spectrum GERS Existing documentation 2. Elevation where equipment receives seismic input Seismic Demand Spectrum (SDS) based on: In-structure response spectrum (IRS) per DOE-STD-1020 Other in-structure response spectrum (determine appropriate experience data scale factor) Design basis earthquake (DBE) per DOE-STD-1020 | | | | | | |
| Scale Factor (SF) Exp | perience Data Factor (F _{ED}) | | | | | | |
| Does capacity exceed demand? Reference: | | Y N | U | | | | |
| Caveats (Section 8.1.5) | | | | | | | |
| Reference Spectrum (Identify with an asterisk (*) those caveats which are met by intent without meeting the specific wording of the caveat rule and explain the reason for this conclusion in the COMMENTS section below) | | | | | | | |
| Equipment is included in earthquake experience Contains only circuit brookers and switches. | | Y N Y N | U | N/A | | | |
| Contains only circuit breakers and switches All latches and fasteners in door secured Adjacent cabinets which are close enough to import sections of multi-bay cabinets, are bolted to | pact, | Y N Y N | U U | N/A N/A | | | |
| if they contain essential relays 5. Wall- or floor-mounted NEMA type-enclosure | - | Y N Y N | U U | N/A N/A | | | |

SEWS 8.1.5 (2 of 4) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|--|------------------------|--------|--------|--------|------------|
| Equipment ID No.: | Equipment Class: Distr | ibuti | on Pa | nels | |
| Equipment description: | | | | | |
| Caveats (Cont.) | | | | | |
| 6. Have you looked for and found no other adverse | concerns? | Υ | N | U | N/A |
| Is the intent of all the caveats met for Reference Spectru | m? | Υ | N | U | N/A |
| GERS (Identify with an asterisk (*) those caveats which wording of the caveat rule and explain the reason for this | | | | | |
| Equipment is included in generic seismic testing | equipment class | Υ | N | U | N/A |
| Meets all Reference Spectrum caveats | | Y | N | Ü | N/A |
| 3. If Switchboard GERS used, item is freestanding | and designated as | V | N.I. | | NI/A |
| a switchboard by the manufacturer 4. No Westinghouse Quicklag Type E Breakers | | Y Y | N N | U U | N/A N/A |
| 5. Adjacent cabinets which are close enough to imp | pact are | • | 14 | O | 14/73 |
| bolted together | | Υ | Ν | U | N/A |
| Is the intent of all the caveats met for GERS? | | Υ | N | U | N/A |
| Anchorage (Chapter 6) | | | | | |
| 1. Type of anchorage: | | | | | |
| expansion anchor | | | | | |
| cast-in-place bolt or headed stud | d anchor | | | | |
| cast-in-place J-bolt arouted-in-place bolt | | | | | |
| grouted-in-place bolt welds to embedded steel on exp | pasad staal | | | | |
| lead cinch anchors | Josed Steel | | | | |
| Other | | | | | |
| N/A (no further anchorage consi | derations) | | | | |
| Appropriate characteristics for anchorage type class. | hecked | | | | |
| (size, location, equipment characteristics) | | Υ | Ν | U | |
| 3. Gap at threaded anchor less than 1/4 inch | | Υ | Ν | U | N/A |
| Base stiffness and no significant prying action re | | Υ | Ν | U | |
| 5. Equipment base strength and structural load pat | h adequate | Y | N | U | N1/A |
| 6. Embedment steel and pads requirements met7. Embedment length requirements met | | Y Y | N N | U U | N/A |
| Anchor spacing requirements met | | Υ | N | U | |
| Edge distance requirements met | | Ϋ́ | N | Ü | |
| 10. Concrete strength requirements met | | Υ | N | U | |

SEWS 8.1.5 (3 of 4) Sheet 3 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | | |
|--|---|--------------|------------------|------------------|------------------|-------------------|--|--|
| Equipme | Equipment ID No.: Equipment Class: Distribution Panels | | | | | | | |
| Equipme | ent description: | | | | | | | |
| Ancho | rage (Cont.) | | | | | | | |
| 11. (12. II 13. II 14. II | Concrete crack requirements met Equipment with essential relays requirements n Installation adequacy requirements met No other concerns chorage capacity exceed demand? | net | Y Y Y Y | N N N N | U U U U | N/A N/A | | |
| Reference | ce: | | | | | | | |
| | ction Effects (Chapter 7) | | | | | | | |
| | Soft targets free from impact by nearby equipm or structures If equipment contains sensitive essential relays | | Υ | N | U | N/A | | |
| 3. [| from all impact by nearby equipment or struct Distribution lines have adequate flexibility No collapse of overhead equipment, distributior | rures | Y Y | N N | U U | N/A N/A | | |
| | or masonry walls Equipment is free from credible and significant | r systems, | Y | N | | N/A | | |
| | seismic-induced flood and spray concerns No credible seismic-induced fire concerns No other "two over one" concerns as defined in | DOE-STD-1021 | Y Y Y | N N N | | N/A N/A N/A | | |
| | No other concerns | | Υ | N | U | N/A | | |
| Is equipr | ment free of interaction effects? | | Y | N | U | | | |
| Comm | ents | | | | | | | |
| | | | | | | | | |

SEWS 8.1.5 (4 of 4) Sheet 4 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | |
|--|--|------------------|-------------------|-----------------|-------|--|
| Equipr | Equipment ID No.: Equipment Class: Distribution Panels | | | | | |
| Equipm | nent description | : | | | | |
| Comr | nents (Cont.) | | | | | |
| Screen | ing Walkdown(s | s): | | | | |
| | <u>Date</u> | <u>Time</u> | Team Member | <u>s</u> | | |
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| - | | | | | | |
| Reco | mmend Res | olution | | | | |
| | Maintenance a | action: | | | | |
| | Further evalua | ation: | | | | |
| | Retrofit design | n: | | | | |
| | Other: | | | | | |
| | No further acti | on required. Equ | uipment is seismi | cally adequate. | | |
| All asp | ects of the equip | pment's seismic | adequacy have b | peen addressed. | | |
| Evalua | tion by: | | | | Date: | |
| (All tea | m members) | | | | - | |
| | | | | <u> </u> | - | |
| | | | | | - | |
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SEWS 8.1.6 (1 of 4) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | | | |
|---|--------------------------------|-------------|---------|------------|--|
| Equipment ID No.: | Equipment Class: Transformers | | | | |
| Equipment description: | | | | | |
| Equipment Location: Bldg. | Floor El. | Room, R | low/Co | ol. | |
| Manufacturer, model, etc.: | | | | | |
| Weight: | | | | | |
| Drawing No.: | Performance Category: | | | | |
| Type (air cooled, oil cooled): | Voltage: | | | | |
| Wall mounted: | Floor mounted: | | | | |
| Functionality Requirement | | | | | |
| Contact Lead Relay Reviewer to determine if item of For components whose function or structural integral For all other components, only anchorage evaluation | rity is required, complete all | sections | of this | form. | |
| Seismic Capacity vs. Demand | | | | | |
| 1. Seismic Capacity based on: Reference Spectrum GERS Existing documentation 2. Elevation where equipment receives seismic input Seismic Demand Spectrum (SDS) based on: In-structure response spectrum (IRS) per DOE-STD-1020 Other in-structure response spectrum (determine appropriate experience data scale factor) Design basis earthquake (DBE) per DOE-STD-1020 Other Scale Factor (SF) Experience Data Factor (F _{ED}) | | | | | |
| Does capacity exceed demand? | | Y N | U | | |
| Reference: | | | | | |
| Caveats (Section 8.1.6) | | | | | |
| Reference Spectrum (Identify with an asterisk (*) the meeting the specific wording of the caveat rule and expla COMMENTS section below) | nin the reason for this concl | usion in th | ie | | |
| Equipment is included in earthquake experience e 4.16 kV rating or less | | Y N Y N | U U | N/A N/A | |
| For floor-mounted dry- and oil-type unit, transform are positively restrained within cabinet | ner coils | Y N | U | N/A | |
| 4. For 750 kVA or larger units, coils are top braced o | or adequately | | | | |
| shown by evaluation 5. For 750 kVA or larger units, 2-inch clearance is pr | | Y N | U | N/A | |
| between energized component and cabinet 6. For 750 kVA or larger units, the slack in the conne | ection between | Y N | U | N/A | |
| the high-voltage leads and the first anchor accommodates 3-inch relative displacement Y N U N/ | | | | | |

SEWS 8.1.6 (2 of 4) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|---|-------------------------|----|-----|---|---------|
| Equipment ID No.: Equipment Class: Transformers | | | | | |
| Equipment description: | | | | | |
| Caveats (Cont.) | | | | | |
| 7. For wall-mounted units, transformer coils anchore near enclosure support surface 8. For floor-mounted units, anchorage does not rely | | Υ | N | U | N/A |
| 8. For floor-mounted units, anchorage does not rely bending of cabinet structures under lateral force 9. Adjacent cabinets which are close enough to imp | es | Υ | N | U | N/A |
| together if they contain essential relays | | Υ | Ν | U | N/A |
| 10. All doors secured by latch or fastener | _ | Y | N | U | N/A |
| 11. Have you looked for and found no other adverse | concerns? | Υ | N | U | N/A |
| Is the intent of all the caveats met for Reference Spectru | ım? | Υ | N | U | N/A |
| GERS (Identify with an asterisk (*) those caveats which | | | | | |
| wording of the caveat rule and explain the reason for this | | | | | |
| Equipment is included in generic seismic testing | equipment class | Υ | N | U | N/A |
| 2. Meets all Reference Spectrum caveats | | Υ | N | U | N/A |
| 3. Dry-type unit (not oil-filled) | | Υ | N | U | N/A |
| 4. Wall- or floor-mounted NEMA-type enclosure | | Υ | N | U | N/A |
| 5. 120 to 480 VAC rating | | Υ | N | U | N/A |
| 6. 7.5 to 225 kVA rating | | Υ | N | U | N/A |
| 7. 180 to 2,000 pounds weight | | Υ | N | U | N/A |
| 8. Internal supports provide positive attachment of9. There is a sufficient clearance of 3/8 inches betw | | Y | N | U | N/A |
| and enclosure | | Y | N | U | N/A |
| 10. Adjacent cabinets which are close enough to imp | act are bolted together | Υ | N | U | N/A |
| Is the intent of all the caveats met for GERS? | | Υ | N | U | N/A |
| Anchorage (Chapter 6) | | | | | |
| 1. Type of anchorage: | | | | | |
| expansion anchor | | | | | |
| acast-in-place bolt or headed stu | d anchor | | | | |
| cast-in-place J-bolt | | | | | |
| grouted-in-place bolt | | | | | |
| welds to embedded steel on exp | nosed steel | | | | |
| lead cinch anchors | 30304 31001 | | | | |
| | | | | | |
| Other | | | | | |
| □ N/A (no further anchorage cons | iderations) | | | | |
| 2. Appropriate characteristics for anchorage type c | hecked | | | | |
| (size, location, equipment characteristics) | Hooked | Υ | N | U | |
| 3. Gap at threaded anchor less than 1/4 inch | | Ϋ́ | N | Ü | N/A |
| Base stiffness and no significant prying action re | aquirements met | Ϋ́ | N | Ü | 14// (|
| 5. Equipment base strength and structural load pat | • | Ϋ́ | N | Ü | |
| 6. Embedment steel and pads requirements met | in adequate | Ϋ́ | N | Ü | N/A |
| 7. Embedment length requirements met | | Ϋ́ | N | U | 1 W/ /T |
| Anchor spacing requirements met | | Ϋ́ | N | U | |
| S. Anchor spacing requirements met Edge distance requirements met | | Ϋ́ | N | U | |
| Concrete strength requirements met | | Ϋ́ | N | U | |
| 10. Condicte strength requirements met | | ' | 1 1 | J | |

SEWS 8.1.6 (3 of 4) Sheet 3 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | |
|--|---------------------------|------------------|------------------|------------|--|--|
| Equipment ID No.: | Equipment Class: Transfor | | | | | |
| Equipment description: | | | | | | |
| Anchorage (Cont.) | | | | | | |
| 11. Concrete crack requirements met 12. Equipment with essential relays requirements met 13. Installation adequacy requirements met 14. No other concerns Does anchorage capacity exceed demand? | Y Y Y | N N N N | U U U U | N/A N/A | | |
| Reference: | | | | | | |
| Interaction Effects (Chapter 7) | | | | | | |
| Soft targets free from impact by nearby equipmed or structures If equipment contains sensitive essential relays, | Y equipment free | N | U | N/A | | |
| from all impact by nearby equipment or structu 3. Attached lines have adequate flexibility 4. No collapse of overhead equipment, distribution | Υ | N N | U | N/A N/A | | |
| or masonry walls 5. Equipment is free from credible and significant seismic-induced flood and spray concerns | Y | N N | U | N/A N/A | | |
| 6. No credible seismic-induced fire concerns7. No other "two over one" concerns as defined in E | Y DOE-STD-1021 Y | N N | | N/A N/A | | |
| 8. No other concerns Is equipment free of interaction effects? | Y Y | N N | U U | N/A | | |
| Comments | | | | | | |
| | | | | | | |

SEWS 8.1.6 (4 of 4) Sheet 4 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|---|--------------------|-----------------|--------------------------|----------|-------------|
| Equipment ID No.: Equipment Class: Transformers | | | | | ormers |
| Equip | ment description: | | | | |
| Com | ments (Cont.) | | | | |
| Scree | ning Walkdown(s) |): | | | |
| | <u>Date</u> | <u>Time</u> | Team Members | | |
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| Reco | ommend Reso | lution | | | |
| | Maintenance ad | ction: | | | |
| | Further evaluat | ion: | | | |
| | Retrofit design: | | | | |
| | Other: | | | | |
| | No further actio | n required. Equ | ipment is seismically ad | equate. | |
| All as | pects of the equip | ment's seismic | adequacy have been add | lressed. | |
| Evalua | ation by: | | | | Date: |
| (All te | am members) _ | | | | |
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SEWS 8.1.7 (1 of 4) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | | | |
|---|---|------------------------|-------------|-------------------|--|
| Equipment ID No.: | Equipment Class: Batt and | ery Charg Inverters | ers | | |
| Equipment description: | | | | | |
| Equipment Location: Bldg. | Floor El. | Room, R | low/Co | ol. | |
| Manufacturer, model, etc.: | | | | | |
| Voltage Input: | Output | | | | |
| Current: | Weight (approximate): | | | | |
| Actuator type: | | | | | |
| Drawing No.: | Performance Category: | | | | |
| Functionality Requirement | | | | | |
| Contact Lead Relay Reviewer to determine if item For components whose function or structural integration For all other components, only anchorage evaluation | rity is required, complete a | ll sections | of this | form. | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | |
| Seismic Capacity based on: Reference Spectrum GERS Existing documentation Elevation where equipment receives seismic input Seismic Demand Spectrum (SDS) based on: | | | | | |
| , , | perience Data Factor (F _{ED}) | | | | |
| Does capacity exceed demand? | | Y N | U | | |
| Reference: | | | | | |
| Caveats (Section 8.1.7) | | | | | |
| Reference Spectrum (Identify with an asterisk (*) those caveats which are met by intent without meeting the specific wording of the caveat rule and explain the reason for this conclusion in the COMMENTS section below) | | | | | |
| Equipment is included in earthquake experience Solid state type For floor-mounted, transformer positively anchor mounted near base, or load path is evaluated Base-assembly of floor-mounted unit properly brastiffened for lateral forces | ed and | Y N Y N Y N | U U U | N/A N/A N/A | |

SEWS 8.1.7 (2 of 4) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|---|--------------------------|----------|---------|--------|------------|
| Equipment ID No.: | Equipment Class: Ba | attery (| | ers | |
| Equipment description: | | | | | |
| Caveats (Cont.) | | | | | |
| 5. For wall-mounted units, transformer supports and | | | | | |
| provide adequate load path to the rear cabinet w | vall | Y | N | U | N/A |
| 6. All latches and fasteners in doors secured7. Adjacent cabinets which are close enough to impa | act are holted | Υ | N | U | N/A |
| together if they contain essential relays | act are boiled | Υ | Ν | U | N/A |
| 8. Have you looked for and found no other adverse of | concerns? | Ý | N | Ŭ | N/A |
| Is the intent of all the caveats met for Reference Spectrur | m? | Y | N | U | N/A |
| | | | | | |
| GERS (Identify with an asterisk (*) those caveats which wording of the caveat rule and explain the reason for this | | | | | |
| - | | VILIVI | 3 56011 | | |
| 1. Equipment is included in generic seismic testing | equipment class | Υ | Ν | U | N/A |
| 2. Meets all Reference Spectrum caveats | | Υ | Ν | U | N/A |
| 3. Silicon-controlled Rectifier (SCR) power controls; | ; wall- or | | | | |
| floor-mounted NEMA-type enclosure | | Υ | N | U | N/A |
| 4. Within range of battery charger ratings: | | V | N.I | | NI/A |
| 24-250 VDC 120-480 VAC | | Y Y | N N | U U | N/A N/A |
| 25-600 amps | | Ϋ́ | N | U | N/A N/A |
| 150-2,850 pounds (floor mounted) | | Ϋ́ | N | U | N/A N/A |
| 150-2,830 pounds (mounted) | | Ϋ́ | N | U | N/A N/A |
| 5. Within range of inverter ratings: | | ' | 11 | U | 11/7 |
| 120 VDC only | | Υ | N | U | N/A |
| 120-480 VAC | | Ý | N | Ü | N/A |
| 0.5-15 kVA | | Ϋ́ | N | Ū | N/A |
| 300-2,000 pounds | | Υ | Ν | Ū | N/A |
| 6. Heavy components are located in lower half of ca | abinet and | | | | |
| are supported from base or rear panel with no | | | | | |
| adjacent to attachment | | Υ | Ν | U | N/A |
| 7. Adjacent cabinets which are close enough to imp | pact are bolted together | Υ | N | U | N/A |
| Is the intent of all the caveats met for GERS? | | Υ | Ν | U | N/A |
| | | | | | |
| Anchorage (Chapter 6) | | | | | |
| 1. Type of anchorage: | | | | | |
| expansion anchor | | | | | |
| cast-in-place bolt or headed stud | d anchor | | | | |
| cast-in-place J-bolt | | | | | |
| grouted-in-place bolt | | | | | |
| welds to embedded steel on exp | osed steel | | | | |
| lead cinch anchors | | | | | |
| ☐ Other | | | | | |
| ☐ N/A (no further anchorage consid | derations) | | | | |
| | | | | | |

SEWS 8.1.7 (3 of 4) Sheet 3 of _____

| | | SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|---------------------------------|---|--|------------------|-------------|-------------|--------------------------|--|
| Equip | ement ID No.: | quipment Class: | Battery (| | ers | | |
| Equip | ment description: | | | | | | |
| Ancl | norage (Cont.) | | | | | | |
| 2. | Appropriate characteristics for anchorage type chec | ked | | | | | |
| | (size, location, equipment characteristics) | | Υ | Ν | U | | |
| 3. | Gap at threaded anchor less than 1/4 inch | | Υ | N | U | N/A | |
| 4. | Base stiffness and no significant prying action require | | Υ | N | U | | |
| 5. | Equipment base strength and structural load path ac | dequate | Υ | N | U | | |
| 6. | Embedment steel and pads requirements met | | Υ | N | U | N/A | |
| 7. | Embedment length requirements met | | Υ | N | U | | |
| 8. | Anchor spacing requirements met | | Υ | N | U | | |
| 9. | Edge distance requirements met | | Υ | N | U | | |
| 10. | Concrete strength requirements met | | Υ | N | U | | |
| 11. | Concrete crack requirements met | | Υ | N | U | | |
| 12. | Equipment with essential relays requirements met | | Υ | Ν | U | N/A | |
| 13. | Installation adequacy requirements met | | Υ | Ν | U | N/A | |
| 14. | No other concerns | | Υ | N | U | | |
| Does | anchorage capacity exceed demand? | | Υ | N | U | | |
| Dofor | ence: | | | | | | |
| Kelele | erice. | | | | | | |
| Inter | action Effects (Chapter 7) | | | | | | |
| 1. | Soft targets free from impact by nearby equipment | | | | | | |
| | or structures | | Υ | Ν | U | N/A | |
| 2. | If equipment contains sensitive essential relays, equ | inment free | • | ., | Ū | 14// | |
| ۷. | from all impact by nearby equipment or structures | ipinoni nee | Υ | Ν | U | N/A | |
| 3. | Attached lines have adequate flexibility | | Ý | N | Ü | N/A | |
| 0. | / titadrica iirida riavo adoquato rickibility | | | | | | |
| 4 | | tems | | | U | , . | |
| 4. | No collapse of overhead equipment, distribution sys | tems, | | N | | | |
| | No collapse of overhead equipment, distribution sys or masonry walls | tems, | Y | N | U | N/A | |
| 4.5. | No collapse of overhead equipment, distribution sys or masonry walls Equipment is free from credible and significant | tems, | Υ | | U | N/A | |
| 5. | No collapse of overhead equipment, distribution sys or masonry walls Equipment is free from credible and significant seismic-induced flood and spray concerns | tems, | Y Y | N | | N/A N/A | |
| 5.6. | No collapse of overhead equipment, distribution sys or masonry walls Equipment is free from credible and significant seismic-induced flood and spray concerns No credible seismic-induced fire concerns | | Y Y Y | N N | U | N/A N/A N/A | |
| 5. 6. 7. | No collapse of overhead equipment, distribution sys or masonry walls Equipment is free from credible and significant seismic-induced flood and spray concerns No credible seismic-induced fire concerns No other "two over one" concerns as defined in DOE | | Y Y Y Y | N N N | U | N/A N/A N/A N/A | |
| 5. 6. 7. 8. | No collapse of overhead equipment, distribution sys or masonry walls Equipment is free from credible and significant seismic-induced flood and spray concerns No credible seismic-induced fire concerns No other "two over one" concerns as defined in DOE No other concerns | | Y Y Y Y | N N N | U U U | N/A N/A N/A | |
| 5. 6. 7. 8. | No collapse of overhead equipment, distribution sys or masonry walls Equipment is free from credible and significant seismic-induced flood and spray concerns No credible seismic-induced fire concerns No other "two over one" concerns as defined in DOE | | Y Y Y Y | N N N | U | N/A N/A N/A N/A | |

SEWS 8.1.7 (4 of 4) Sheet 4 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | |
|--|------------------|--------------|------------------------|------------------|--------------------------------|--|
| Equip | ment ID No.: | | | Equipment Class: | Battery Chargers and Inverters | |
| Equipr | ment description | 1: | | | | |
| Com | ments (Cont.) | | | | | |
| Screer | ning Walkdown(| s): | | | | |
| | <u>Date</u> | <u>Time</u> | Team Members | <u> </u> | | |
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| Reco | mmend Res | olution | | | | |
| | Maintenance a | action: _ | | | | |
| | Further evalua | ation: _ | | | | |
| ٥ | Retrofit design | າ: _ | | | | |
| | Other: | - | | | | |
| | No further acti | ion required | I. Equipment is seismi | cally adequate. | | |
| All asp | ects of the equi | pment's sei | smic adequacy have b | een addressed. | | |
| Evalua | ation by: | | | | Date: | |
| (All tea | am members) | | | | | |
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SEWS 8.1.8 (1 of 4) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | | |
|---|--|--|--|--|
| Equipment ID No.: | Equipment Class: Instrumentation and Control Panels | | | |
| Equipment description: | | | | |
| System: | | | | |
| Equipment Location: Bldg. | Floor El. Room, Row/Col. | | | |
| Weight of each Panel: | | | | |
| Manufacturer, model, etc.: | | | | |
| Drawing No.: | Performance Category: | | | |
| Functionality Requirement | | | | |
| Contact Lead Relay Reviewer to determine if item For components whose function or structural integr For all other components, only anchorage evaluation | rity is required, complete all sections of this form. | | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | |
| scale factor) Design basis earthquake (DBE) Other | (IRS) per DOE-STD-1020 ctrum (determine appropriate experience data per DOE-STD-1020 erience Data Factor (F _{ED}) Y N U | | | |
| Caveats (Section 8.1.8) | | | | |
| Reference Spectrum (Identify with an asterisk (*) those caveats which are met by intent without meeting the specific wording of the caveat rule and explain the reason for this conclusion in the COMMENTS section below) | | | | |
| Equipment is included in earthquake experience No computers or programmable controllers Strip chart recorders evaluated Steel frame and sheet metal structurally adequate | Y N U N/A Y N U N/A | | | |

SEWS 8.1.8 (2 of 4) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | |
|--|---|----------------------------------|---------------------------------|------------------|---|--------------------------|
| Equipment ID No.: | | Equipment Class: Inst | trumei itrol P | | n and | |
| Equipment description: | | | | | | |
| Caveats (Cont.) | | | | | | |
| 5. Adjacent cabinets of or sections of mu together if they compared to the secured by the secure | or and found no other adverse | bolted n falling out concerns? | Y Y Y | N N N N | U U U | N/A N/A N/A N/A |
| Is the intent of all the cavea | ats met for Reference Spectrur | m? | Υ | N | U | N/A |
| Anchorage (Chapter 6) | | | | | | |
| ☐ cas ☐ cas ☐ gro ☐ we ☐ lea ☐ Ott | pansion anchor st-in-place bolt or headed stud st-in-place J-bolt buted-in-place bolt elds to embedded steel on exp ad cinch anchors her A (no further anchorage consid | osed steel | | | | |
| (size, location, ed 3. Gap at threaded ar 4. Base stiffness and 5. Equipment base str 6. Embedment steel a 7. Embedment length 8. Anchor spacing red 9. Edge distance requ 10. Concrete strength of | quirements met uirements met requirements met quirements met | quirements met n adequate | Y Y Y Y Y Y Y | X | 000000000000000000000000000000000000000 | N/A N/A |
| 12. Equipment with essential relays requirements met Y N U N/A | | | N/A N/A | | | |
| Reference: | | | | | | |

SEWS 8.1.8 (3 of 4) Sheet 3 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | |
|--|----------------|------|---|------------|--|--|
| Equipment ID No.: Equipment Class: Instrumentation and Control Panels | | | | | | |
| Equipment description: | | | | | | |
| Interaction Effects (Chapter 7) | | | | | | |
| 1. Soft targets free from impact by nearby equipme | nt | | | | | |
| or structures | Y | N | U | N/A | | |
| 2. If equipment contains sensitive essential relays, | | . NI | U | NI/A | | |
| from all impact by nearby equipment or structu 3. Attached lines have adequate flexibility | res i | | U | N/A N/A | | |
| 4. No collapse of overhead equipment, distribution | | ., | Ü | 14// (| | |
| or masonry walls | Υ | N | U | N/A | | |
| 5. Equipment is free from credible and significant | | | | | | |
| seismic-induced flood and spray concerns | Ŋ | | U | N/A | | |
| 6. No credible seismic-induced fire concerns |))) | | | N/A | | |
| 7. No other "two over one" concerns as defined in I8. No other concerns | OOE-STD-1021 \ | | U | N/A N/A | | |
| | | | | IN/A | | |
| Is equipment free of interaction effects? | Υ | N | U | | | |
| Comments | | | | | | |
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SEWS 8.1.8 (4 of 4) Sheet 4 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|--|----------------------|---------------------------|---|--|--|
| Equipment | | | Equipment Class: Instrumentation and Control Panels | | |
| Equipment | description: | | | | |
| Commen | Comments (Cont.) | | | | |
| Screening V | Valkdown(s): | | | | |
| <u>Dat</u> | <u>e</u> <u>Time</u> | Team Members | | | |
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| | 15 marketian | | | | |
| Kecomm | end Resolution | | | | |
| ☐ Mai | ntenance action: | | | | |
| ☐ Fur | ther evaluation: | | | | |
| ☐ Ret | rofit design: | | | | |
| ☐ Oth | er: | | | | |
| ☐ No | further action requi | red. Equipment is seismic | ally adequate. | | |
| All aspects | of the equipment's | seismic adequacy have be | een addressed. | | |
| Evaluation b | oy: | | Date: | | |
| (All team me | embers) | | | | |
| | | | | | |
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SEWS 8.1.9 (1 of 4) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | | | | |
|---|--------------------------|------------|--------|------------|--|--|
| Equipment ID No.: | Equipment Class: Instru | ıments | on Rac | ks | | |
| Equipment description: | | | | | | |
| Equipment Location: Bldg. | Floor El. | Room, | Row/C | ol. | | |
| Manufacturer, model, etc.: | | | | | | |
| Weight: | | | | | | |
| Drawing No.: | Performance Category: | | | | | |
| Functionality Requirement | | | | | | |
| Contact Lead Relay Reviewer to determine if item contains Essential Relays For components whose function or structural integrity is required, complete all sections of this form. For all other components, only anchorage evaluation is required. | | | | | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | | |
| 1. Seismic Capacity based on: Reference Spectrum GERS Existing documentation 2. Elevation where equipment receives seismic input Seismic Demand Spectrum (SDS) based on: In-structure response spectrum (IRS) per DOE-STD-1020 Other in-structure response spectrum (determine appropriate experience data scale factor) Design basis earthquake (DBE) per DOE-STD-1020 Other Scale Factor (SF) Experience Data Factor (F _{ED}) | | | | | | |
| Does capacity exceed demand? | | Y N | U | | | |
| Reference: | | | | | | |
| Caveats (Section 8.1.9) | | | | | | |
| Reference Spectrum (Identify with an asterisk (*) those caveats which are met by intent without meeting the specific wording of the caveat rule and explain the reason for this conclusion in the COMMENTS section below) | | | | | | |
| Equipment is included in earthquake experience No computers or programmable controllers | | Y N Y N | U | N/A N/A | | |
| Steel frame and sheet metal structurally adequat | | Y N | U | N/A | | |
| Adjacent racks which are close enough to impact of multi-bay racks, are bolted together if they companies. | t, or sections ontain | ., ., | | | | |
| essential relays 5. Have you looked for and found no other adverse | | Y N Y N | U | N/A N/A | | |
| | | | | | | |
| Is the intent of all the caveats met for Reference Spectru | m? | Y N | U | N/A | | |

SEWS 8.1.9 (2 of 4) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|---|--|--------------------------|-------------------|--|--|
| Equipment ID No.: | Equipment Class: Instru | ments o | n Rack | (S | |
| Equipment description: | | | | | |
| Caveats (Cont.) | | | | | |
| GERS (Identify with an asterisk (*) those caveats which wording of the caveat rule and explain the reason for this | conclusion in the COMMEN | NTS sect | ion bel | ow) | |
| Equipment is included in generic seismic testing Meets all Reference Spectrum caveats Component is a pressure, temperature, level or f Component is one of the specific makes and mode Necessary function of component not sensitive to induced system perturbations (e.g., sloshing) No vacuum tubes All external mounting bolts in place Demand based on amplified portion of 3% damperspectrum if estimated natural frequency of rack Rack capable of structurally transferring GERS is loads to anchorage Adjacent racks which are close enough to impact multi-bay racks, are bolted together Is the intent of all the caveats met for GERS? | low transmitter dels tested o seismically ed floor response t less than 33 Hertz evel seismic | | | N/A N/A N/A N/A N/A N/A N/A N/A | |
| Anchorago (Charter C) | | | | | |
| Anchorage (Chapter 6) 1. Type of anchorage: | osed steel | | | | |
| Appropriate characteristics for anchorage type ch (size, location, equipment characteristics) Gap at threaded anchor less than 1/4 inch Base stiffness and no significant prying action reference Equipment base strength and structural load path Embedment steel and pads requirements met Embedment length requirements met Anchor spacing requirements met Edge distance requirements met Concrete strength requirements met | quirements met | / N / N / N / N | U U U U U U U U U | N/A N/A | |

SEWS 8.1.9 (3 of 4) Sheet 3 of _____

| SCREENING EVALUATION WO | ORK SHEET (SEWS) (Co | nt.) | | |
|---|---------------------------|------------------|------------------|------------|
| Equipment ID No.: | Equipment Class: Instrume | ents or | า Rack | (S |
| Equipment description: | | | | |
| Anchorage (Cont.) | | | | |
| 11. Concrete crack requirements met 12. Equipment with essential relays requirements m 13. Installation adequacy requirements met 14. No other concerns Does anchorage capacity exceed demand? Reference: | Y Y Y | N N N N | U U U U | N/A N/A |
| Interaction Effects (Chapter 7) | | | | |
| Soft targets free from impact by nearby equipme or structures If equipment contains sensitive essential relays, | Υ | N | U | N/A |
| from all impact by nearby equipment or structu | | N N | U U | N/A N/A |
| Attached lines have adequate flexibility No collapse of overhead equipment, distribution or masonry walls | | N | U | N/A N/A |
| 5. Equipment is free from credible and significant | | | | |
| seismic-induced flood and spray concerns 6. No credible seismic-induced fire concerns | Y Y | N N | | N/A N/A |
| 7. No other "two over one" concerns as defined in I | | N | | N/A |
| 8. No other concerns | Y | N | U | N/A |
| Is equipment free of interaction effects? | Υ | N | U | |
| Comments | | | | |
| | | | | |

SEWS 8.1.9 (4 of 4) Sheet 4 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | |
|--|----------------------------|--------------------------|----------------|
| Equipment ID No.: | | Equipment Class: Instrun | nents on Racks |
| Equipment description | : | | |
| Comments (Cont.) | | | |
| Screening Walkdown(s | s): | | |
| <u>Date</u> | <u>Time</u> <u>Team Me</u> | <u>embers</u> | |
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| Recommend Reso | olution | | |
| ☐ Maintenance a | action: | | |
| ☐ Further evalua | ation: | | |
| ☐ Retrofit design | 1: | | |
| Other: | | | |
| | on required. Equipment is | seismically adequate. | |
| | pment's seismic adequacy | | |
| Evaluation by: | | | Date: |
| (All team members) | | | |
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SEWS 8.1.10 (1 of 3) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | | | | | |
|--|---|------------|---------|------------|--|--|--|
| Equipment ID No.: Equipment Class: Temperature Sensors | | | | | | | |
| Equipment description: | | | | | | | |
| System: | | | | | | | |
| Equipment Location: Bldg. | Floor El. | Room, R | ow/Co | l. | | | |
| Manufacturer, model, etc.: | | | | | | | |
| Approximate Weight: | | | | | | | |
| Drawing No.: | Performance Category: | | | | | | |
| Functionality Requirement | | | | | | | |
| □ Contact Lead Relay Reviewer to determine if item □ For components whose function or structural integ □ For all other components, only anchorage evaluate | rity is required, complete al | l sections | of this | form. | | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | | | |
| Seismic Capacity based on: Reference Spectrum GERS Existing documentation Elevation where equipment receives seismic inpose Seismic Demand Spectrum (SDS) based on: | (IRS) per DOE-STD-1020 ectrum (determine appropria per DOE-STD-1020 | | nce da | | | | |
| Does capacity exceed demand? | | Y N | U | | | | |
| Reference: | | | | | | | |
| Caveats (Section 8.1.10) | | | | | | | |
| Caveats (Section 8.1.10) Reference Spectrum (Identify with an asterisk (*) those caveats which are met by intent without meeting the specific wording of the caveat rule and explain the reason for this conclusion in the COMMENTS section below) | | | | | | | |
| Equipment is included in earthquake experience No possibility of detrimental differential displace between mounting of connection head and mounting of connection head. | ment ounting of | Y N | U | N/A | | | |
| temperature sensor 3. Associated electronics are all solid state (no vac | | Y N Y N | U U | N/A N/A | | | |
| 4. Have you looked for and found no other adverse | • | Y N | Ü | N/A | | | |
| Is the intent of all the caveats met for Reference Spectru | um? | Y N | U | N/A | | | |

SEWS 8.1.10 (2 of 3) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | | |
|--|---|---------------------|--------|--------|------------|--|--|--|
| Equipment ID No.: Equipment Class: Temperature Sensors | | | | | | | | |
| Equipment description: | | | | | | | | |
| Anchorage (Chapte | | | | | | | | |
| 1. Type of ancho | - | | | | | | | |
| ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | expansion anchor | | | | | | | |
| | cast-in-place bolt or headed stud | d anchor | | | | | | |
| | cast-in-place J-bolt | | | | | | | |
| | grouted-in-place bolt | | | | | | | |
| | welds to embedded steel on exp | osed steel | | | | | | |
| | lead cinch anchors | | | | | | | |
| | Other | | | | | | | |
| | N/A (no further anchorage consid | derations) | | | | | | |
| 2. Appropriate cl | haracteristics for anchorage type ch | necked | | | | | | |
| | on, equipment characteristics) | Υ | Ν | U | | | | |
| • | ed anchor less than 1/4 inch | Υ | N | U | N/A | | | |
| | s and no significant prying action rec | | Ν | U | | | | |
| | ise strength and structural load path | • | N | U | | | | |
| | steel and pads requirements met | Y | N | U | N/A | | | |
| | ength requirements met | Y | N | U | | | | |
| | ng requirements met | Y | N | U U | | | | |
| | e requirements met ngth requirements met | Y | N N | U | | | | |
| | ck requirements met | Y | N | U | | | | |
| | th essential relays requirements me | | N | Ü | N/A | | | |
| ' ' | lequacy requirements met | Y | N | Ü | N/A | | | |
| 14. No other cond | | Ý | N | Ü | | | | |
| Does anchorage capa | acity exceed demand? | Υ | N | U | | | | |
| | | | 14 | J | | | | |
| Reference: | | | | | | | | |
| Interaction Effect | ts (Chapter 7) | | | | | | | |
| | ee from impact by nearby equipmen | nt | | | | | | |
| or structures | | Υ | Ν | U | N/A | | | |
| If equipment of | contains sensitive essential relays, o | equipment free | | | | | | |
| | act by nearby equipment or structu | | Ν | U | N/A | | | |
| | s have adequate flexibility | Υ | Ν | U | N/A | | | |
| | f overhead equipment, distribution | | | | | | | |
| or masonry | | Υ | N | | N/A | | | |
| | free from credible and significant | V | | | N1/A | | | |
| | uced flood and spray concerns | Y | N | | N/A | | | |
| | eismic-induced fire concerns | Y DOE-STD-1021 Y | N | | N/A | | | |
| 7. No other "two 8. No other cond | over one" concerns as defined in D | OE-STD-1021 Y | N N | U | N/A N/A | | | |
| | | | | | IN/A | | | |
| Is equipment free of ir | nteraction effects? | Υ | N | U | | | | |

SEWS 8.1.10 (3 of 3) Sheet 3 of _____

| | SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | |
|----------|--|---------------|----------------------|-----------------------|---------------|-----|--|
| Equipr | nent ID No.: | | | Equipment Class: Temp | erature Senso | ors | |
| Equipn | nent description | ı: | | | | | |
| Comr | ments | | | | | | |
| Screen | ing Walkdown(| s): | | | | | |
| | <u>Date</u> | <u>Time</u> | Team Members | | | | |
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| Reco | mmend Res | olution | | | | | |
| | Maintenance a | action: | | | | | |
| | Further evalua | ation: | | | | | |
| | Retrofit design | ղ: | | | | | |
| | Other: | | | | | | |
| | | _ | | | | | |
| | No further acti | ion required. | Equipment is seismic | ally adequate. | | | |
| All asp | ects of the equi | pment's seis | mic adequacy have be | een addressed. | | | |
| | tion by: | | | | Date: | | |
| (All tea | m members) | | | | | | |
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SEWS 8.2.1 (1 of 4) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | | | | | |
|---|--|-----------------------|--------|-------------------|--|--|--|
| Equipment ID No.: | Equipment Class: Fluid- Air-O | Operated perated V | | | | | |
| Equipment description: | <u>-</u> | , | | | | | |
| Equipment Location: Bldg. | Floor El. | Room, R | ow/Co | ıl. | | | |
| Manufacturer, model, etc.: | | | | | | | |
| Smallest pipe diameter attached to valve: | | | | | | | |
| Pipe centerline to top of motor actuator length: | | | | | | | |
| Valve material: | Yoke material: | | | | | | |
| Weight: | Γ | | | | | | |
| Drawing No.: | Performance Category: | | | | | | |
| Functionality Requirement | | | | | | | |
| ☐ For components whose function or structural integr | ☐ For components whose function or structural integrity is required, complete all sections of this form. | | | | | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | | | |
| 1. Seismic Capacity based on: Reference Spectrum GERS Existing documentation 2. Elevation where equipment receives seismic inpose Seismic Demand Spectrum (SDS) based on: In-structure response spectrum Other in-structure response spectrum scale factor) Design basis earthquake (DBE) Other Scale Factor (SE) | (IRS) per DOE-STD-1020 ctrum (determine appropria per DOE-STD-1020 | te experie | nce da | ita | | | |
| | perience Data Factor (F _{ED}) | | | | | | |
| Does capacity exceed demand? Y N U Reference: | | | | | | | |
| Caveats (Section 8.2.1) | | | | | | | |
| Reference Spectrum Fluid-Operated Valves (Identify with an asterisk (*) those caveats which are met by intent without meeting the specific wording of the caveat rule and explain the reason for this conclusion in the COMMENTS section below) | | | | | | | |
| Equipment is included in earthquake experience exp | elief or | Y N Y N | U U | N/A N/A N/A | | | |
| pision-operated valves) T IN U IN/A | | | | | | | |

SEWS 8.2.1 (2 of 4) Sheet 2 of _____

| Equipment ID No.: Equipment description: Caveats (Cont.) 4. Mounted on 1-inch diameter pipe or larger Centerline of pipe to top of operator within restrictions or yoke Can take static 3g load (for air-operated diaphragm, lightweight pistori-operated, and spring-operated pressure relief valves) 6. Centerline of pipe to top of operator within restrictions or yoke can take static 3g load (for air-operated diaphragm, lightweight pistori-operated valve of substantial weight) 7. Actuator and yoke not braced independently from pipe 8. Have you looked for and found no other adverse concerns? 9. N. U. N/A 1s the intent of all the caveats met for Reference Spectrum? 9. N. U. N/A 1s the intent of all the caveats met for Reference Spectrum? 9. N. U. N/A 1s Equipment is included in generic seismic testing equipment class 10. Air-operated yalves (identify with an asterisk (*) those caveats which are met by intent without meeting the specific wording of the caveat rule and explain the reason for this conclusion in the COMMENTS section below) 10. Equipment is included in generic seismic testing equipment class 11. Equipment is included in generic seismic testing equipment class 12. Meets all Reference Spectrum caveats 13. Air-operated gate or globe valve with spring-opposed diaphragm-type pneumatic actuator 14. Use amplified response spectrum of piping system at piping/ 15. Valve and operator will not impact surrounding structures and components 16. Mounted on 1 to 3-inch nominal pipe line 17. Carbon steel (not cast iron) yoke or bonnet 18. Type of anchorage: 19. Appropriate characteristics for anchorage type checked 10. Gastin-place bolt or headed stud anchor 21. Carbon steel (not cast iron) yoke or bonnet 22. Appropriate characteristics for anchorage type checked 23. Gap at threaded anchor less than 1/4 inch 24. Base stiffness and no significant prying action requirements met 25. Quipment base strength and structural load path adequate 27. N. U. N/A 28. Eded Gastance rendering the structural loa | SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | |
|--|--|---|-----------|------|----|-------|--|--|
| Caveats (Cont.) | Equip | | | | | | | |
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| □ grouted-in-place bolt □ welds to embedded steel on exposed steel □ lead cinch anchors □ Other □ N/A (no further anchorage considerations) 2. Appropriate characteristics for anchorage type checked (size, location, equipment characteristics) 3. Gap at threaded anchor less than 1/4 inch 4. Base stiffness and no significant prying action requirements met 5. Equipment base strength and structural load path adequate 6. Embedment steel and pads requirements met 7. N U 8. Anchor spacing requirements met 9. N U 10. N/A 11. The strength of the space of the space of the strength of the space of | | | afiction | | | | | |
| welds to embedded steel on exposed steel lead cinch anchors Other N/A (no further anchorage considerations) Appropriate characteristics for anchorage type checked (size, location, equipment characteristics) Gap at threaded anchor less than 1/4 inch Hasse stiffness and no significant prying action requirements met Hasse stiffness and no structural load path adequate Hasse strength and structural load path adequate | | · | | | | | | |
| lead cinch anchors Other N/A (no further anchorage considerations) Appropriate characteristics for anchorage type checked (size, location, equipment characteristics) Gap at threaded anchor less than 1/4 inch Base stiffness and no significant prying action requirements met Equipment base strength and structural load path adequate Embedment steel and pads requirements met Embedment length requirements met Anchor spacing requirements met Y V V V V V V V V V V V V | | · | sad staal | | | | | |
| Other N/A (no further anchorage considerations) Appropriate characteristics for anchorage type checked (size, location, equipment characteristics) Gap at threaded anchor less than 1/4 inch Base stiffness and no significant prying action requirements met Equipment base strength and structural load path adequate Embedment steel and pads requirements met Embedment length requirements met Anchor spacing requirements met N/A V/A V/A V/A V/A V/A V/A V/A | | | seu sieei | | | | | |
| N/A (no further anchorage considerations) 2. Appropriate characteristics for anchorage type checked (size, location, equipment characteristics) 3. Gap at threaded anchor less than 1/4 inch 4. Base stiffness and no significant prying action requirements met 5. Equipment base strength and structural load path adequate 6. Embedment steel and pads requirements met 7. Demonstrated in the property of the proper | | _ | | | | | | |
| 2. Appropriate characteristics for anchorage type checked (size, location, equipment characteristics) 3. Gap at threaded anchor less than 1/4 inch 4. Base stiffness and no significant prying action requirements met 5. Equipment base strength and structural load path adequate 6. Embedment steel and pads requirements met 7. Embedment length requirements met 8. Anchor spacing requirements met 7. V 8. Anchor spacing requirements met 9. V | | | erations) | | | | | |
| (size, location, equipment characteristics) 3. Gap at threaded anchor less than 1/4 inch 4. Base stiffness and no significant prying action requirements met 5. Equipment base strength and structural load path adequate 6. Embedment steel and pads requirements met 7 N U 8. Anchor spacing requirements met 7 N U 8 N/A | 2. | | | | | | | |
| 3. Gap at threaded anchor less than 1/4 inch 4. Base stiffness and no significant prying action requirements met 5. Equipment base strength and structural load path adequate 6. Embedment steel and pads requirements met 7. Embedment length requirements met 8. Anchor spacing requirements met 7. V 8. Anchor spacing requirements met 9. V 1. V 1 |] | ,, , | | | U | | | |
| 5. Equipment base strength and structural load path adequate 6. Embedment steel and pads requirements met 7. Embedment length requirements met 8. Anchor spacing requirements met Y N U N/A Y N U Y N U Y N U | 3. | · · · · · · · · · · · · · · · · · · · | | | | N/A | | |
| 6. Embedment steel and pads requirements met 7. N U N/A 7. Embedment length requirements met 8. Anchor spacing requirements met Y N U Y N U V N U | 4. | | | ′ N | | | | |
| 7. Embedment length requirements met Y N U 8. Anchor spacing requirements met Y N U | | • | | | | | | |
| 8. Anchor spacing requirements met Y N U | | · | | | | N/A | | |
| | | | | | | | | |
| | 8. 9. | Anchor spacing requirements met Edge distance requirements met | | | U | | | |

SEWS 8.2.1 (3 of 4) Sheet 3 of _____

| | SCREENING EVALUATION W | ORK SHEET (S | SEWS) (Co | nt.) | | |
|--|--|--------------|------------------|------------------|------------------|------------|
| Equipment ID No.: Equipment Class: Fluid-Operated/ Air-Operated Valves | | | | | | |
| Equipr | ment description: | | | | | |
| Anch | norage (Cont.) | | | | | |
| 10. 11. 12. 13. 14. | Concrete strength requirements met Concrete crack requirements met Equipment with essential relays requirements met Installation adequacy requirements met No other concerns | et | Y Y Y Y | N N N N | U U U U | N/A N/A |
| Does a | anchorage capacity exceed demand? | | Υ | Ν | U | |
| Refere | ence: | | | | | |
| | | | | | | |
| | action Effects (Chapter 7) | | | | | |
| 1. 2. | Soft targets free from impact by nearby equipme or structures If equipment contains sensitive essential relays, | | Υ | N | U | N/A |
| ۷. | from all impact by nearby equipment or structu | | Υ | Ν | U | N/A |
| 3. | Attached lines have adequate flexibility | cyctoms | Υ | Ν | U | N/A |
| 4. | No collapse of overhead equipment, distribution systems, or masonry walls | | | Ν | | N/A |
| 5. | Equipment is free from credible and significant seismic-induced flood and spray concerns | | Y | N | U | N/A |
| 6. 7. | No credible seismic-induced fire concerns No other "two over one" concerns as defined in [| DOE-STD-1021 | Y Y | N N | | N/A N/A |
| 8. | No other concerns | | Υ | Ν | U | N/A |
| Is equi | ipment free of interaction effects? | | Υ | N | U | |
| Com | ments | | | | | |
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SEWS 8.2.1 (4 of 4) Sheet 4 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | |
|--|------------------|-----------------|-----------------|------------------|---------------------------------------|----|
| Equipment I | D No.: | | | Equipment Class: | Fluid-Operated/ Air-Operated Valve | es |
| Equipment de | escription: | | | | | |
| Comment | S (Cont.) | | | | | |
| Screening W | alkdown(s): | | | | | |
| <u>Date</u> | <u>Tir</u> | me : | Team Members | <u> </u> | | |
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| Recomme | nd Resolut | tion | | | | |
| | tenance action | | | | | |
| ☐ Furth | ner evaluation: | | | | | |
| ☐ Retro | ofit design: | | | | | |
| ☐ Othe | r: | | | | | |
| ☐ No fu | ırther action re | equired. Equip | oment is seismi | cally adequate. | | |
| All aspects of | f the equipmer | nt's seismic ac | dequacy have b | een addressed. | | |
| Evaluation by | /: | | | | Date: | |
| (All team me | mbers) | | | | | |
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SEWS 8.2.2 MOV (1 of 4)

Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | | | | |
|--|--|-------------------------------------|--|--|--|--|
| Equipment ID No.: | Equipment Class: Motor | r-Operated Valves | | | | |
| Equipment description: | , | , | | | | |
| Equipment Location: Bldg. | Floor El. | Room, Row/Col. | | | | |
| Manufacturer, model, etc.: | | | | | | |
| Smallest pipe diameter attached to valve: | | | | | | |
| Pipe centerline to top of motor actuator length: | | | | | | |
| Valve material: | Yoke material: | | | | | |
| Weight: | | | | | | |
| Drawing No.: | Performance Category: | | | | | |
| Functionality Requirement | | | | | | |
| Contact Lead Relay Reviewer to determine if item contains Essential Relays For components whose function or structural integrity is required, complete all sections of this form. For all other components, only anchorage evaluation is required. | | | | | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | | |
| 1. Seismic Capacity based on: Reference Spectrum GERS Existing documentation 2. Elevation where equipment receives seismic inposeismic Demand Spectrum (SDS) based on: In-structure response spectrum Other in-structure response spectrum scale factor) Design basis earthquake (DBE) Other Scale Factor (SF) Exp | (IRS) per DOE-STD-1020 ctrum (determine appropria per DOE-STD-1020 | te experience data | | | | |
| Does capacity exceed demand? | | Y N U | | | | |
| Reference: | | | | | | |
| Caveats (Section 8.2.2) | | | | | | |
| Reference Spectrum (Identify with an asterisk (*) those caveats which are met by intent without meeting the specific wording of the caveat rule and explain the reason for this conclusion in the COMMENTS section below) | | | | | | |
| Equipment is included in earthquake experience et No cast-iron body No cast-iron yoke | | Y N U N/A Y N U N/A Y N U N/A | | | | |

SEWS 8.2.2 MOV (2 of 4)

Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | | |
|--|--|-------------|------------------|------------------|---------------------------------|--|--|--|
| Equipment ID No.: | Equipment Class: Motor | r-Ope | rated | Valve | es | | | |
| Equipment description: | | | | | | | | |
| Caveats (Cont.) | | | | | | | | |
| Mounted on 1-inch diameter pipe or larger Centerline of pipe to operator within restriction static 3g load Actuator and yoke not braced independently f Have you looked for and found no other adversible intent of all the caveats met for Reference Spectages GERS (Identify with an asterisk (*) those caveats where the caveats | ns or yoke can take rom pipe rse concerns? etrum? | Y Y Y | N N N N | U U U U | N/A N/A N/A N/A N/A | | | |
| wording of the caveat rule and explain the reason for t (Note that GERS for this class apply to <u>only</u> motor ope valve/pipe interface are <u>not</u> covered.) | this conclusion in the COMME | NTS s | sectio | n belo | w) | | | |
| Equipment is included in generic seismic testi Meets all Reference Spectrum caveats Use amplified spectrum of piping system and valve/operator interface | valve at | Y Y Y | N N N | U U | N/A N/A N/A | | | |
| 4. Motor axis is horizontal 5. Valve and operator will not impact surrounding structures and components 6. Motor controls remotely located 7. If valve has side mounted actuator attached to secondary reducer, seismic brackets are used 8. Manufactured by Limitorque or Rotork 9. Any loose or missing valve-to-operator bolts are tightened or replaced (tightness check not required) | | | | U | N/A N/A N/A | | | |
| Is the intent of all the caveats met for GERS? | | Υ | N | U | N/A | | | |
| Anchorage (Chapter 6) | | | | | | | | |
| 1. Type of anchorage: | exposed steel | | | | | | | |
| Appropriate characteristics for anchorage type (size, location, equipment characteristics) Gap at threaded anchor less than 1/4 inch Base stiffness and no significant prying action | | Y Y Y | N N N | U U U | N/A | | | |

Sheet 3 of _____

SEWS 8.2.2 MOV (3 of 4)

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | | | |
|--|--|---|--------|--------|--------|--------------|--|--|--|
| Equipment ID No.: Equipment Class: Motor-Operated Valves | | | | | | | | | |
| Equip | Equipment description: | | | | | | | | |
| Anc | horage (Cont.) | | | | | | | | |
| 5. | Equipment base strength and structural load path | | Y | N | U | | | | |
| 6. | Embedment steel and pads requirements met | | Y | N | U | N/A | | | |
| 7. | Embedment length requirements met | | Y | N | U | | | | |
| 8. | Anchor spacing requirements met | | Y | N | U | | | | |
| 9. | Edge distance requirements met | | Y Y | N | U | | | | |
| 10. | Concrete strength requirements met | | Y Y | N | U | | | | |
| 11. 12. | Concrete crack requirements met | | r Y | N N | U | N/A | | | |
| 13. | Equipment with essential relays requirements met | | r Y | N | U U | N/A N/A | | | |
| | Installation adequacy requirements met No other concerns | | r Y | N | U | IN/A | | | |
| 14. | No other concerns | | Y | IN | U | | | | |
| Does | anchorage capacity exceed demand? | • | Y | N | U | | | | |
| Refer | rence: | | | | | | | | |
| | | | | | | | | | |
| | raction Effects (Chapter 7) | | | | | | | | |
| 1. | Soft targets free from impact by nearby equipment | | | | | | | | |
| | or structures | | Y | Ν | U | N/A | | | |
| 2. | If equipment contains sensitive essential relays, e | | | | | | | | |
| | from all impact by nearby equipment or structure | | Y | N | U | N/A | | | |
| 3. | Attached lines have adequate flexibility | | Y | Ν | U | N/A | | | |
| 4. | No collapse of overhead equipment, distribution sy | | , | | | N 1/A | | | |
| l _ | or masonry walls | | Y | N | | N/A | | | |
| 5. | Equipment is free from credible and significant | , | , | | | N 1/A | | | |
| | seismic-induced flood and spray concerns | | Y | N | U | N/A | | | |
| 6. | No credible seismic-induced fire concerns | | Y | N | | N/A | | | |
| 7. | No other "two over one" concerns as defined in DO | | Y | N | | N/A | | | |
| 8. | No other concerns | • | Y | N | U | N/A | | | |
| Is equ | uipment free of interaction effects? | , | Y | N | U | | | | |
| _ | | | | | | | | | |
| Con | nments | | | | | | | | |
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SEWS 8.2.2 MOV (4 of 4)

Sheet 4 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | | | |
|--|------------------------|----------------|---------------------|------------------------|-------------------|--|--|--|--|
| Equip | ment ID No.: | | | Equipment Class: Motor | r-Operated Valves | | | | |
| Equip | ment description | : | | | | | | | |
| Com | ments (Cont.) | | | | | | | | |
| Scree | Screening Walkdown(s): | | | | | | | | |
| | <u>Date</u> | <u>Time</u> | Team Members | į | | | | | |
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| Reco | ommend Res | olution | | | | | | | |
| | Maintenance a | action: | | | | | | | |
| | Further evalua | ation: | | | | | | | |
| | | | | | | | | | |
| | Retrofit design | n: | | | | | | | |
| | Other: | | | | | | | | |
| | No further acti | on required. E | quipment is seismic | cally adequate. | | | | | |
| All asp | pects of the equi | pment's seismi | c adequacy have be | een addressed. | | | | | |
| | ation by: | | | | Date: | | | | |
| (All tea | am members) | | | | | | | | |
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SEWS 8.2.2 SOV (1 of 4)

| Sheet 1 | of | | _ |
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| SCREENING EVALUATION WORK SHEET (SEWS) | | | | | | |
|---|---|-------------------------------------|--|--|--|--|
| Equipment ID No.: | Equipment Class: Soler | oid-Operated Valves | | | | |
| Equipment description: | | | | | | |
| Equipment Location: Bldg. | Floor El. | Room, Row/Col. | | | | |
| Manufacturer, model, etc.: | | | | | | |
| Smallest pipe diameter attached to valve: | | | | | | |
| Pipe centerline to top of motor actuator length: | | | | | | |
| Valve material: | Yoke material: | | | | | |
| Weight: | | | | | | |
| Drawing No.: | Performance Category: | | | | | |
| Functionality Requirement | | | | | | |
| Contact Lead Relay Reviewer to determine if item contains Essential Relays For components whose function or structural integrity is required, complete all sections of this form. For all other components, only anchorage evaluation is required. | | | | | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | | |
| 1. Seismic Capacity based on: Reference Spectrum GERS Existing documentation 2. Elevation where equipment receives seismic input Seismic Demand Spectrum (SDS) based on: In-structure response spectrum (IRS) per DOE-STD-1020 Other in-structure response spectrum (determine appropriate experience data scale factor) Design basis earthquake (DBE) per DOE-STD-1020 Other | | | | | | |
| Scale Factor (SF) Ex | perience Data Factor (F _{ED}) | | | | | |
| Does capacity exceed demand? | | Y N U | | | | |
| Reference: | Reference: | | | | | |
| Caveats (Section 8.2.2) | | | | | | |
| Reference Spectrum (Identify with an asterisk (*) those caveats which are met by intent without meeting the specific wording of the caveat rule and explain the reason for this conclusion in the COMMENTS section below) | | | | | | |
| Equipment is included in earthquake experience No cast-iron body No cast-iron yoke | | Y N U N/A Y N U N/A Y N U N/A | | | | |

SEWS 8.2.2 SOV (2 of 4) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|--|---|-----------------|--|--------------------|------------|
| Equipment ID No.: Equipment Class: Solenoid-Operated Valves | | | | | |
| Equipment description: | | | | | |
| Caveats (Cont.) | | | | | |
| 4. Centerline of pipe to operator within restrictions | or yoke can take | | | | N1/A |
| static 3g load | | Y | N | U | N/A |
| 5. Actuator and yoke not braced independently from | | Y | N | U | N/A |
| 6. Have you looked for and found no other adverse | concerns? | Y | N | U | N/A |
| Is the intent of all the caveats met for Reference Spectru | m? | Υ | N | U | N/A |
| GERS (Identify with an asterisk (*) those caveats which wording of the caveat rule and explain the reason for this (Note that GERS for this class apply to only motor opera valve/pipe interface are not covered.) | s conclusion in the COMM tor and its connection to v | ENTS alve; ' | S section sect | on bel itself a | ow) ınd |
| 1. Equipment is included in generic seismic testing | equipment class | Υ | N | U | N/A |
| 2. Meets all Reference Spectrum caveats | | Υ | N | U | N/A |
| 3. Use amplified spectrum for piping system at pipi | | Υ | N | U | N/A |
| 4. Valve and operator will not impact surrounding s | tructures and | \ / | | | N1/A |
| components | | Y | N | U | N/A |
| 5. Nominal pipe size is 1 inch or less | | Y | N | U | N/A |
| 6. Valve body is forged brass or steel | | Y | N | U | N/A |
| 7. Housing oriented in accordance with manufactur | | Y | N | U | N/A |
| Height of valve (pipe centerline to top of housingIf SOV is a pilot on a larger valve, use amplified | | Υ | N | U | N/A |
| attachment point of SOV to larger valve | | Υ | Ν | U | N/A |
| 10. Use 3.5g ZPA GERS for ASCO Type 206-381 | | Υ | Ν | U | N/A |
| Is the intent of all the caveats met for GERS? | | Υ | N | U | N/A |
| Anchorage (Chapter 6) | | | | | |
| Type of anchorage: | | | | | |
| expansion anchor | | | | | |
| ast-in-place bolt or headed stu- | d anchor | | | | |
| cast-in-place J-bolt | | | | | |
| grouted-in-place bolt | | | | | |
| Ŭ i | and stant | | | | |
| • | oosed steel | | | | |
| lead cinch anchors | | | | | |
| Other | | | | | |
| N/A (no further anchorage cons | derations) | | | | |
| Appropriate characteristics for anchorage type c | hecked | | | | |
| (size, location, equipment characteristics) | | Υ | Ν | U | |
| Gap at threaded anchor less than 1/4 inch | | Υ | Ν | U | N/A |
| Base stiffness and no significant prying action re | | Υ | Ν | U | |
| 5. Equipment base strength and structural load pat | h adequate | Υ | Ν | U | |
| 6. Embedment steel and pads requirements met | | | | U | N/A |

SEWS 8.2.2 SOV (3 of 4) Sheet 3 of _____

| | SCREENING EVALUATION WO | PRK SHEET (SEWS) (Co | ont.) | | |
|----------|--|--------------------------|--------|--------|------------|
| Equi | pment ID No.: | Equipment Class: Solenoi | d-Oper | ated V | /alves |
| Equi | oment description: | | | | |
| | horage (Cont.) | | | | |
| 7. | Embedment length requirements met | Υ | N | U | |
| 8. | Anchor spacing requirements met | Υ | Ν | U | |
| 9. | Edge distance requirements met | Υ | Ν | U | |
| 10. | Concrete strength requirements met | Υ | Ν | U | |
| 11. | Concrete crack requirements met | Υ | N | U | |
| 12. | Equipment with essential relays requirements me | | N | U | N/A |
| 13. | Installation adequacy requirements met | Y | N | U | N/A |
| 14. | No other concerns | Υ | N | U | |
| Does | anchorage capacity exceed demand? | Υ | Ν | U | |
| Refe | rence: | | | | |
| | | | | | |
| Inte | raction Effects (Chapter 7) | | | | |
| 1. | Soft targets free from impact by nearby equipmer | | | | |
| | or structures | Υ | Ν | U | N/A |
| 2. | If equipment contains sensitive essential relays, e | | | | |
| _ | from all impact by nearby equipment or structur | | N | U | N/A |
| 3. | Attached lines have adequate flexibility | Υ | Ν | U | N/A |
| 4. | No collapse of overhead equipment, distribution s | - | | | N1/A |
| _ | or masonry walls | Υ | N | | N/A |
| 5. | Equipment is free from credible and significant | V | N.I | | NI/A |
| 6 | seismic-induced flood and spray concerns No credible seismic-induced fire concerns | Y | N | U | N/A |
| 6. 7. | No other "two over one" concerns as defined in D | | N N | | N/A N/A |
| 7. 8. | No other concerns | Y | N | U | N/A N/A |
| Ο. | No other concerns | T | IN | U | IN/A |
| Is eq | uipment free of interaction effects? | Υ | Ν | U | |
| Con | nments | | | | |
| COII | mons | | | | |
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SEWS 8.2.2 SOV (4 of 4) Sheet 4 of _____

| SCREENING EVALUA | SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | |
|--|--|--|--|--|--|
| Equipment ID No.: | Equipment Class: Solenoid-Operated Valves | | | | |
| Equipment description: | | | | | |
| Comments (Cont.) | | | | | |
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| Recommend Resolution | | | | | |
| ☐ Maintenance action: | | | | | |
| | | | | | |
| ☐ Further evaluation: | | | | | |
| Retrofit design: | | | | | |
| ☐ Other: | | | | | |
| ☐ No further action required. Equipme | ent is seismically adequate. | | | | |
| All aspects of the equipment's seismic adequ | uacy have been addressed. | | | | |
| • | Date: | | | | |
| (All team members) | | | | | |
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SEWS 8.2.3 (1 of 3) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | | | |
|--|------------------------|----------------|--|--|--|
| Equipment ID No.: | Equipment Class: Horiz | ontal Pumps | | | |
| Equipment description: | | | | | |
| Equipment Location: Bldg. | Floor El. | Room, Row/Col. | | | |
| Manufacturer, model, etc.: | | | | | |
| Drawing No.: | Performance Category: | | | | |
| Weight: | | | | | |
| Horsepower/Motor rating: RPM | Head | Flow rate | | | |
| Functionality Requirement | | | | | |
| Contact Lead Relay Reviewer to determine if item contains Essential Relays For components whose function or structural integrity is required, complete all sections of this form. For all other components, only anchorage evaluation is required. | | | | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | |
| 1. Seismic Capacity based on: Reference Spectrum GERS Existing documentation 2. Elevation where equipment receives seismic input Seismic Demand Spectrum (SDS) based on: In-structure response spectrum (IRS) per DOE-STD-1020 Other in-structure response spectrum (determine appropriate experience data scale factor) Design basis earthquake (DBE) per DOE-STD-1020 Other Scale Factor (SF) Experience Data Factor (F _{ED}) Does capacity exceed demand? Y N U | | | | | |
| Reference: | | | | | |
| Caveats (Section 8.2.3) | | | | | |
| Reference Spectrum (Identify with an asterisk (*) the meeting the specific wording of the caveat rule and expla COMMENTS section below) | | | | | |
| COMMENTS section below) 1. Equipment is included in earthquake experience equipment class 2. Driver and pump connected by rigid base or skid 3. Shaft has thrust restraint in both axial directions 4. No risk of excessive nozzle loads such as gross pipe motion or differential displacement 5. Have you looked for and found no other adverse concerns? Y N U N/A V N U N/A | | | | | |
| Is the intent of all the caveats met for Reference Spectru | m? | Y N U N/A | | | |

SEWS 8.2.3 (2 of 3) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|--|--------------------------------------|---------------------|---------------------|---------------------------------|--|
| Equipment ID No.: Equipment Class: Horizontal Pumps | | | | | |
| Equipment description: | | | | | |
| Anchorage (Chapter 6) | | | | | |
| 1. Type of anchorage: | | | | | |
| Appropriate characteristics for anchorage type checked (size, location, equipment characteristics) Gap at threaded anchor less than 1/4 inch Base stiffness and no significant prying action requirements met Equipment base strength and structural load path adequate Embedment steel and pads requirements met Embedment length requirements met Anchor spacing requirements met Edge distance requirements met Concrete strength requirements met Concrete crack requirements met Equipment with essential relays requirements met Installation adequacy requirements met No other concerns Does anchorage capacity exceed demand? | Y Y Y Y Y Y Y Y | 7 7 7 7 7 7 7 7 7 7 | 0 0 0 0 0 0 0 0 0 0 | N/A N/A N/A N/A | |
| Interaction Effects (Chapter 7) | | | | | |
| Soft targets free from impact by nearby equipment or structures If equipment contains sensitive essential relays, equipment free | Υ | N | U | N/A | |
| from all impact by nearby equipment or structures 3. Attached lines have adequate flexibility 4. No collapse of overhead equipment, distribution systems, | Y | N N | U U | N/A N/A | |
| or masonry walls 5. Equipment is free from credible and significant seismic-induced flood and spray concerns 6. No credible seismic-induced fire concerns 7. No other "two over one" concerns as defined in DOE-STD-1021 8. No other concerns | Y Y Y Y | N N N N | U | N/A N/A N/A N/A N/A | |
| Is equipment free of interaction effects? | Y | N | U | | |

SEWS 8.2.3 (3 of 3) Sheet 3 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|--|-------------------|------------------|--------------------|-------------------------|-------|
| Equip | ment ID No.: | | | Equipment Class: Horizo | |
| Equipr | nent description | : | | | |
| Com | ments | | | | |
| Screer | ning Walkdown(s | s): | | | |
| | <u>Date</u> | <u>Time</u> | Team Members | | |
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| Reco | mmend Res | olution | | | |
| | Maintenance a | action: | | | |
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| | Further evalua | ition: | | | |
| | Retrofit design | n: | | | |
| | Other: | | | | |
| | No further acti | on required. Equ | uipment is seismic | cally adequate. | |
| All asp | ects of the equip | pment's seismic | adequacy have be | een addressed. | |
| Evalua | ition by: | | | | Date: |
| (All tea | am members) | | | | |
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SEWS 8.2.4 (1 of 3) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | | | |
|---|-------------------------|----------------|--|--|--|
| Equipment ID No.: | Equipment Class: Vertic | al Pumps | | | |
| Equipment description: | | | | | |
| Equipment Location: Bldg. | Floor El. | Room, Row/Col. | | | |
| Manufacturer, model, etc.: | | | | | |
| Drawing No.: | Performance Category: | | | | |
| Weight: | | | | | |
| Horsepower/Motor rating: RPM | Head | Flow rate | | | |
| Functionality Requirement | | | | | |
| Contact Lead Relay Reviewer to determine if item contains Essential Relays For components whose function or structural integrity is required, complete all sections of this form. For all other components, only anchorage evaluation is required. | | | | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | |
| 1. Seismic Capacity based on: Reference Spectrum GERS Existing documentation 2. Elevation where equipment receives seismic input Seismic Demand Spectrum (SDS) based on: In-structure response spectrum (IRS) per DOE-STD-1020 Other in-structure response spectrum (determine appropriate experience data scale factor) Design basis earthquake (DBE) per DOE-STD-1020 Other Scale Factor (SF) Experience Data Factor (F _{ED}) | | | | | |
| Does capacity exceed demand? | | Y N U | | | |
| Reference: | | | | | |
| Caveats (Section 8.2.4) | | | | | |
| Reference Spectrum (Identify with an asterisk (*) those caveats which are met by intent without meeting the specific wording of the caveat rule and explain the reason for this conclusion in the COMMENTS section below) | | | | | |
| 1. Equipment is included in earthquake experience equipment class Y N U N/A | | | | | |
| with radial bearing at bottom to support shaft Y N U N/A | | | | | |
| No risk of excessive nozzle loads such as gross p or differential displacement | | Y N U N/A | | | |
| 4. Have you looked for and found no other adverse | concerns? | Y N U N/A | | | |
| Is the intent of all the caveats met for Reference Spectru | m? | Y N U N/A | | | |

SEWS 8.2.4 (2 of 3) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | |
|--|--|---|--------------------------|------------------|------------------|------------------|------------|
| Equipme | nt ID No.: | | Equipment Class: | Vertical F | umps | S | |
| Equipmen | nt description: | | | | | | |
| <u> </u> | it docomption. | | | | | | |
| | age (Chapter | - | | | | | |
| 1. T | ype of anchora | - | osed steel derations) | Y | N | U | |
| 4. B 5. E | ap at threaded ase stiffness a quipment base | d anchor less than 1/4 inch and no significant prying action re e strength and structural load pat | | Y Y Y | N N N | U U U | N/A |
| 7. E 8. A 9. E | mbedment ler nchor spacing dge distance r | el and pads requirements met gth requirements met requirements met equirements met gth requirements met | | Y Y Y Y | N N N N | U U U U | N/A |
| 11. C 12. E 13. In | oncrete crack quipment with | requirements met essential relays requirements me quacy requirements met | et | Y Y Y | N N N N | U U U | N/A N/A |
| Does and | horage capaci | ty exceed demand? | | Υ | Ν | U | |
| | | | | | | | |
| | tion Effects | • • • | | | | | |
| | or structures | from impact by nearby equipme ntains sensitive essential relays, | | Υ | N | U | N/A |
| | from all impac | t by nearby equipment or structu | | Υ | Ν | U | N/A |
| | | nave adequate flexibility overhead equipment, distribution alls | systems, | Y Y | N N | U | N/A N/A |
| | quipment is fre seismic-induc | ee from credible and significant ed flood and spray concerns smic-induced fire concerns | | Y Y | N N | U | N/A N/A |
| 7. N | | ver one" concerns as defined in [| OOE-STD-1021 | Y Y | N N | U | N/A N/A |
| | | eraction effects? | | Y | N | U | 14/1 |

SEWS 8.2.4 (3 of 3) Sheet 3 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|--|------------------|-----------------|--------------------|-------------------------|----------|
| Equip | ment ID No.: | | | Equipment Class: Vertic | al Pumps |
| Equipn | nent description | : | | | |
| Comi | ments | | | | |
| Screen | ning Walkdown(| s): | | | |
| | <u>Date</u> | <u>Time</u> | Team Members | | |
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| Reco | mmend Res | olution | | | |
| | Maintenance a | action: | | | |
| | Further evalua | ation: | | | |
| | Retrofit design | n: | | | |
| | Other: | | | | |
| | No further acti | on required. Eq | uipment is seismic | cally adequate. | |
| All asp | ects of the equi | pment's seismic | adequacy have be | een addressed. | |
| Evalua | tion by: | | | | Date: |
| (All tea | ım members) | | | | |
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SEWS 8.2.5 (1 of 3) Sheet 1 of _____

| SCREENING EVALUATION | N WORK SHEET (SEW | /S) | | | | |
|--|-------------------------------|------------|--------|------------|--|--|
| Equipment ID No.: | Equipment Class: Chille | ers | | | | |
| Equipment description: | | | | | | |
| System: | | | | | | |
| Equipment Location: Bldg. | Floor El. | Room, Ro | ow/Col | | | |
| Manufacturer, model, etc.: | | | | | | |
| Weight: | | | | | | |
| Drawing No.: | Performance Category: | | | | | |
| Functionality Requirement | | | | | | |
| Contact Lead Relay Reviewer to determine if item contains Essential Relays For components whose function or structural integrity is required, complete all sections of this form. For all other components, only anchorage evaluation is required. | | | | | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | | |
| 1. Seismic Capacity based on: Reference Spectrum GERS Existing documentation 2. Elevation where equipment receives seismic input Seismic Demand Spectrum (SDS) based on: In-structure response spectrum (IRS) per DOE-STD-1020 Other in-structure response spectrum (determine appropriate experience data scale factor) Design basis earthquake (DBE) per DOE-STD-1020 Other Scale Factor (SF) Experience Data Factor (F _{ED}) Does capacity exceed demand? Y N U | | | | | | |
| Reference: | | | | | | |
| Caveats (Section 8.2.5) | | | | | | |
| Reference Spectrum (Identify with an asterisk (*) the meeting the specific wording of the caveat rule and explace COMMENTS section below) | ain the reason for this concl | | | | | |
| Equipment is included in earthquake experience of Evaporator and condenser tanks reasonably brack themselves for lateral forces without relying on bending of steel plates or structural steel shape | ed between weak-way | Y N Y N | U U | N/A N/A | | |
| 3. Have you looked for and found no other adverse | concerns? | Y N | Ü | N/A | | |
| Is the intent of all the caveats met for Reference Spectru | m? | Y N | U | N/A | | |

SEWS 8.2.5 (2 of 3) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | |
|--|------------------------------------|--|--------------|-------------|--------------------------|--------|-------------------|
| Equipment ID No.: Equipment Class: Chillers | | | | | | | |
| | nt description: | | | | | | |
| | rage (Chapter | 6) | | | | | |
| 1. T | ype of anchora | expansion anchor cast-in-place bolt or headed stud cast-in-place J-bolt grouted-in-place bolt welds to embedded steel on exp lead cinch anchors Other | osed steel | | | | |
| N/A (no further anchorage considerations) 2. Appropriate characteristics for anchorage type checked | | | | | N/A N/A N/A N/A | | |
| Reference | e: | | | | | | |
| | tion Effects | | | | | | |
| | or structures | e from impact by nearby equipmentains sensitive essential relays, | | Υ | N | U | N/A |
| 3. A | from all impac Attached lines h | that is sensitive essential relays, of the sensitiv | res | Y Y | N N | U U | N/A N/A |
| | seismic-induc | ee from credible and significant ed flood and spray concerns | | Y Y | N N | U | N/A N/A |
| 7. N | | smic-induced fire concerns ver one" concerns as defined in E rns | OOE-STD-1021 | Y Y Y | N N N | U | N/A N/A N/A |
| Is equipm | nent free of inte | eraction effects? | | Υ | N | U | |

SEWS 8.2.5 (3 of 3) Sheet 3 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|--|-------------------|-----------------|--------------------|----------------|-------|
| Equipment ID No.: Equipment Class: Chil | | | | | |
| Equipr | ment description | : | | | |
| Com | ments | | | | |
| Screer | ning Walkdown(s | s): | | | |
| | <u>Date</u> | <u>Time</u> | Team Members | | |
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| Reco | mmend Res | olution | | | |
| | Maintenance a | | | | |
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| | Further evalua | ition: | | | |
| | Retrofit design | 1: | | | |
| | Other: | | | | |
| | No further acti | on required. Eq | uipment is seismic | ally adequate. | |
| All asp | ects of the equip | pment's seismic | adequacy have be | een addressed. | |
| | ation by: | | | | Date: |
| (All tea | am members) | | | | |
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SEWS 8.2.6 (1 of 3) Sheet 1 of _____

| SCREENING EVALUATION | I WORK SHEET (SEW | /S) | | | | | |
|--|---|------------|--------|------------|--|--|--|
| Equipment ID No.: | Equipment Class: Air Co | ompress | ors | | | | |
| Equipment description: | | | | | | | |
| System: | | | | | | | |
| Equipment Location: Bldg. | Floor El. | Room, I | Row/Co | ol. | | | |
| Manufacturer, model, etc.: | | | | | | | |
| Weight: | | | | | | | |
| Drawing No.: | Performance Category: | | | | | | |
| Functionality Requirement | | | | | | | |
| Contact Lead Relay Reviewer to determine if item contains Essential Relays For components whose function or structural integrity is required, complete all sections of this form. For all other components, only anchorage evaluation is required. | | | | | | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | | | |
| Seismic Demand Spectrum (SDS) based on: In-structure response spectrum (Other in-structure response spectrum (scale factor) | 1. Seismic Capacity based on: Reference Spectrum GERS Existing documentation 2. Elevation where equipment receives seismic input Seismic Demand Spectrum (SDS) based on: In-structure response spectrum (IRS) per DOE-STD-1020 Other in-structure response spectrum (determine appropriate experience data scale factor) Design basis earthquake (DBE) per DOE-STD-1020 | | | | | | |
| Scale Factor (SF) Exp | erience Data Factor (F _{ED}) | | | | | | |
| Does capacity exceed demand? | | Y N | U | | | | |
| Reference: | | | | | | | |
| Caveats (Section 8.2.6) | | | | | | | |
| Reference Spectrum (Identify with an asterisk (*) those caveats which are met by intent without meeting the specific wording of the caveat rule and explain the reason for this conclusion in the COMMENTS section below) | | | | | | | |
| Equipment is included in earthquake experience e Have you looked for and found no other adverse of | | Y N Y N | U | N/A N/A | | | |
| Is the intent of all the caveats met for Reference Spectrum | m? | Y N | U | N/A | | | |

SEWS 8.2.6 (2 of 3) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | |
|--|---|-----------------|-------------|-------------|-------------|----------------|
| Equi | Equipment ID No.: Equipment Class: Air Compressors | | | | | |
| Equip | oment description: | | | | | |
| Anc | horage (Chapter 6) | | | | | |
| 1. | Type of anchorage: | | | | | |
| | expansion anchor cast-in-place bolt or headed stucast-in-place J-bolt grouted-in-place bolt welds to embedded steel on explace cinch anchors Other N/A (no further anchorage cons | posed steel | | | | |
| | | | | | | |
| 2. 3. 4. 5. | Appropriate characteristics for anchorage type (size, location, equipment characteristics) Gap at threaded anchor less than 1/4 inch Base stiffness and no significant prying action r Equipment base strength and structural load pa | equirements met | Y Y Y | N N N | U U U | N/A |
| 6. 7. 8. | Embedment steel and pads requirements met Embedment length requirements met Anchor spacing requirements met | iii auequale | Y Y Y | N N N | U U U | N/A |
| 9. 10. 11. 12. | Edge distance requirements met Concrete strength requirements met Concrete crack requirements met Equipment with essential relays requirements n | ant . | Y Y Y | N N N | U U U | N/A |
| 13. 14. | Installation adequacy requirements met No other concerns | iei | Y Y | N N | U | N/A N/A |
| | anchorage capacity exceed demand? | | Υ | N | U | |
| | rence: | | | | | |
| 1. | raction Effects (Chapter 7) Soft targets free from impact by nearby equipm | ont | | | | |
| 2. | or structures If equipment contains sensitive essential relays | | Υ | N | U | N/A |
| 3. | from all impact by nearby equipment or struct Attached lines have adequate flexibility | • • | Y Y | N N | U U | N/A N/A |
| 4. | No collapse of overhead equipment, distribution or masonry walls | n systems, | Y | N | J | N/A |
| 5. | Equipment is free from credible and significant seismic-induced flood and spray concerns | | Υ | N | U | N/A |
| 6. | No credible seismic-induced fire concerns | | Ϋ́ | N | Ü | N/A |
| 7. 8. | No other "two over one" concerns as defined in No other concerns | DOE-STD-1021 | Y Y | N N | Ü | N/A N/A |
| | | | | | | IN/ <i>F</i> A |
| Is equ | uipment free of interaction effects? | | Y | N | U | |

SEWS 8.2.6 (3 of 3) Sheet 3 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | |
|--|--|------------------|------------------|-------------------------|-----------|--|--|
| Equipr | ment ID No.: | | | Equipment Class: Air Co | mpressors | | |
| Equipm | nent description: | | | | | | |
| Comr | ments | | | | | | |
| Screen | ning Walkdown(s) |) : | | | | | |
| | <u>Date</u> | <u>Time</u> | Team Members | | | | |
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| Reco | mmend Reso | lution | | | | | |
| | Maintenance ad | ction: | | | | | |
| | Further evaluat | ion: | | | | | |
| | Retrofit design: | | | | | | |
| | Other: | | | | | | |
| | □ No further action required. Equipment is seismically adequate. | | | | | | |
| All asp | ects of the equip | ment's seismic a | adequacy have be | een addressed. | | | |
| Evalua | Evaluation by: Date: | | | | | | |
| (All tea | m members) _ | | | | | | |
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SEWS 8.2.7 (1 of 3) Sheet 1 of _____

| SCREENING EVALUATION | N WORK SHEET (SEW | /S) | | | | |
|--|------------------------|------------|--------|------------|--|--|
| Equipment ID No.: | Equipment Class: Motor | -Generato | rs | | | |
| Equipment description: | | | | | | |
| System: | , | | | | | |
| Equipment Location: Bldg. | Floor El. | Room, Ro | ow/Co | l. | | |
| Manufacturer, model, etc.: | | | | | | |
| Weight: | , | | | | | |
| Drawing No.: | Performance Category: | | | | | |
| Functionality Requirement | | | | | | |
| Contact Lead Relay Reviewer to determine if item contains Essential Relays For components whose function or structural integrity is required, complete all sections of this form. For all other components, only anchorage evaluation is required. | | | | | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | | |
| 1. Seismic Capacity based on: Reference Spectrum GERS Existing documentation 2. Elevation where equipment receives seismic input | | | | | | |
| Reference: | | | | | | |
| Caveats (Section 8.2.7) | | | | | | |
| Reference Spectrum (Identify with an asterisk (*) the meeting the specific wording of the caveat rule and expla COMMENTS section below) | | | | | | |
| Equipment is included in earthquake experience Main driver and driven equipment connected by | a rigid support | Y N | U | N/A | | |
| or skid 3. Have you looked for and found no other adverse | | Y N Y N | U U | N/A N/A | | |
| Is the intent of all the caveats met for Reference Spectru | m? | Y N | U | N/A | | |

SEWS 8.2.7 (2 of 3) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|--|-----------------------------------|------------------------------|---|--|--|
| Equipment ID No.: Equipment Class: Motor-Generators | | | | | |
| Equipment description: | | | | | |
| | | | | | |
| Anchorage (Chapter 6) | | | | | |
| 1. Type of anchorage: | sed steel | | | | |
| O Annual minto all annual minting for an all annual time all an | al a al | | | | |
| Appropriate characteristics for anchorage type check (size, location, equipment characteristics) Gap at threaded anchor less than 1/4 inch Base stiffness and no significant prying action required. | Y N Y N irements met Y N | U U N/A U | Д | | |
| 5. Equipment base strength and structural load path a 6. Embedment steel and pads requirements met 7. Embedment length requirements met 8. Anchor spacing requirements met | adequate Y N Y N Y N Y N | U U N/ <i>F</i> U U | 4 | | |
| 9. Edge distance requirements met 10. Concrete strength requirements met 11. Concrete crack requirements met | Y N Y N Y N | U U U | | | |
| 12. Equipment with essential relays requirements met 13. Installation adequacy requirements met 14. No other concerns | Y N Y N Y N | U N/A U N/A U | | | |
| Does anchorage capacity exceed demand? Reference: | Y N | U | | | |
| Telefolioc. | | | | | |
| Interaction Effects (Chapter 7) | | | | | |
| Soft targets free from impact by nearby equipment or structures If equipment contains sensitive essential relays, equipment | Y N | U N/A | Ą | | |
| from all impact by nearby equipment or structures | Y N | U N/A | | | |
| Attached lines have adequate flexibility No collapse of overhead equipment, distribution systems or masonry walls | Y N stems, Y N | U N/A | | | |
| Equipment is free from credible and significant seismic-induced flood and spray concerns | Y N | U N/A | | | |
| 6. No credible seismic-induced fire concerns | Y N | N/A | Α | | |
| 7. No other "two over one" concerns as defined in DO8. No other concerns | E-STD-1021 Y N Y N | N/ <i>A</i> U N/ <i>A</i> | | | |
| Is equipment free of interaction effects? | Y N | U | | | |

SEWS 8.2.7 (3 of 3) Sheet 3 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | |
|--|--|------------------|------------------|-------------------------|------------|--|--|
| Equipr | ment ID No.: | | | Equipment Class: Motor- | Generators | | |
| Equipm | nent description: | | | | | | |
| Comr | nents | | | | | | |
| Screen | ing Walkdown(s) |) : | | | | | |
| | <u>Date</u> | <u>Time</u> | Team Members | | | | |
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| Reco | mmend Reso | lution | | | | | |
| | Maintenance ad | ction: | | | | | |
| | Further evaluat | ion: | | | | | |
| | Retrofit design: | | | | | | |
| | Other: | | | | | | |
| | □ No further action required. Equipment is seismically adequate. | | | | | | |
| All asp | ects of the equip | ment's seismic a | adequacy have be | een addressed. | | | |
| Evalua | Evaluation by: Date: | | | | | | |
| (All tea | m members) _ | | | | | | |
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SEWS 8.2.8 (1 of 3) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | | | | | |
|--|------------------------|------------|--------|------------|--|--|--|
| Equipment ID No.: | Equipment Class: Engin | e-Generat | ors | | | | |
| Equipment description: | | | | | | | |
| System: | | | | | | | |
| Equipment Location: Bldg. | Floor El. | Room, Ro | ow/Col | | | | |
| Manufacturer, model, etc.: | | | | | | | |
| Weight: | | | | | | | |
| Drawing No.: | Performance Category: | | | | | | |
| Functionality Requirement | | | | | | | |
| Contact Lead Relay Reviewer to determine if item contains Essential Relays For components whose function or structural integrity is required, complete all sections of this form. For all other components, only anchorage evaluation is required. | | | | | | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | | | |
| 1. Seismic Capacity based on: Reference Spectrum GERS Existing documentation 2. Elevation where equipment receives seismic input Seismic Demand Spectrum (SDS) based on: In-structure response spectrum (IRS) per DOE-STD-1020 Other in-structure response spectrum (determine appropriate experience data scale factor) Design basis earthquake (DBE) per DOE-STD-1020 Other Scale Factor (SF) Experience Data Factor (F _{ED}) Does capacity exceed demand? Y N U | | | | | | | |
| Reference: | | | · | | | | |
| Caveats (Section 8.2.8) | | | | | | | |
| Reference Spectrum (Identify with an asterisk (*) those caveats which are met by intent without meeting the specific wording of the caveat rule and explain the reason for this conclusion in the COMMENTS section below) | | | | | | | |
| Equipment is included in earthquake experience equipment class V N U N/A Driver and driven equipment connected by a rigid support or | | | | | | | |
| common skid 3. Have you looked for and found no other adverse | | Y N Y N | U | N/A N/A | | | |
| Is the intent of all the caveats met for Reference Spectru | m? | Y N | U | N/A | | | |

SEWS 8.2.8 (2 of 3) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | |
|--|--------------------------------------|--|----------------------|-------------|-------------|-------------|------------|
| Equipment I | D No.: | | Equipment Class: Eng | gine-G | enera | itors | |
| Equipment de | | | | | | | |
| | | | | | | | |
| Anchorag | | | | | | | |
| 1. Type | of anchor | rage: expansion anchor cast-in-place bolt or headed stud cast-in-place J-bolt grouted-in-place bolt welds to embedded steel on exp lead cinch anchors Other N/A (no further anchorage considered | osed steel | | | | |
| | • | aracteristics for anchorage type ch | | - , | | | |
| (size, location, equipment characteristics) 3. Gap at threaded anchor less than 1/4 inch 4. Base stiffness and no significant prying action requirements met | | | | Y Y Y | N N N | U U U | N/A |
| 6. Emb | 7. Embedment length requirements met | | | Y Y Y | N N N | U U U | N/A |
| 9. Edge 10. Cond | distance crete stren | requirements met gth requirements met requirements met | | Y Y Y | N N N | U U U | |
| 13. Insta | | n essential relays requirements me equacy requirements met erns | et | Y Y Y | N N N | U U U | N/A N/A |
| Does anchor | age capac | ity exceed demand? | | Υ | N | U | |
| Reference: _ | | | | | | | |
| Interaction | | | | | | | |
| or | structures | e from impact by nearby equipme | | Υ | N | U | N/A |
| fro | m all impa | ontains sensitive essential relays, ct by nearby equipment or structu | | Υ | N | U | N/A |
| 4. No c | ollapse of | have adequate flexibility overhead equipment, distribution | systems, | Y | N | U | N/A |
| 5. Equi | | ee from credible and significant | | Y | N | | N/A |
| seismic-induced flood and spray concerns Y N U 6. No credible seismic-induced fire concerns Y N | | | U | N/A N/A | | | |
| | | over one" concerns as defined in E | OOE-STD-1021 | Ϋ́ | N | | N/A |
| 8. No o | ther conce | erns | | Y | N | U | N/A |
| Is equipment | free of int | eraction effects? | | Υ | N | U | |

SEWS 8.2.8 (3 of 3) Sheet 3 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | |
|--|--|------------------|--------------------|-----------------|-------|--|--|
| Equip | Equipment ID No.: Equipment Class: Engine-Generators | | | | | | |
| Equipn | nent description: | | | | | | |
| Comi | ments | | | | | | |
| Screen | ning Walkdown(s | s): | | | | | |
| | <u>Date</u> | <u>Time</u> | Team Members | | | | |
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| Reco | mmend Rese | olution | | | | | |
| | Maintenance a | action: | | | | | |
| | Further evalua | tion: | | | | | |
| | Retrofit design | : <u> </u> | | | _ | | |
| | Other: | | | | | | |
| | No further action | on required. Equ | uipment is seismic | cally adequate. | | | |
| All asp | ects of the equip | oment's seismic | adequacy have be | een addressed. | | | |
| Evalua | ition by: | | | | Date: | | |
| (All tea | nm members) | | | | | | |
| | - | | | | | | |
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SEWS 8.2.9 (1 of 3) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | | | | |
|--|--------------------------------|------------|---------|------------|--|--|
| Equipment ID No.: | Equipment Class: Air Ha | andlers | | | | |
| Equipment description: | | | | | | |
| System: | , | | | | | |
| Equipment Location: Bldg. | Floor El. | Room, I | Row/Co | ol. | | |
| Manufacturer, model, etc.: | | | | | | |
| Weight: | | | | | | |
| Drawing No.: | Performance Category: | | | | | |
| Functionality Requirement | | | | | | |
| □ Contact Lead Relay Reviewer to determine if item □ For components whose function or structural integr □ For all other components, only anchorage evaluation | rity is required, complete all | l sections | of this | form. | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | | |
| 1. Seismic Capacity based on: Reference Spectrum GERS Existing documentation 2. Elevation where equipment receives seismic input Seismic Demand Spectrum (SDS) based on: In-structure response spectrum (IRS) per DOE-STD-1020 Other in-structure response spectrum (determine appropriate experience data scale factor) Design basis earthquake (DBE) per DOE-STD-1020 Other Scale Factor (SF) Experience Data Factor (F _{ED}) Does capacity exceed demand? Y N U Reference: | | | | | | |
| Caveats (Section 8.2.9) | | | | | | |
| Reference Spectrum (Identify with an asterisk (*) the meeting the specific wording of the caveat rule and expla COMMENTS section below) | in the reason for this concl | usion in t | he | | | |
| Equipment is included in earthquake experience experience experience experience of the Anchorage of heavy internal components is adequate vibration isolators have seismic stops to limit up | uate; internal lift and | Y N | U | N/A | | |
| lateral movement 3. All doors secured by latch or fastener 4. No possibility of excessive duct distortion causing binding or | | | | | | |
| misalignment of any internal fan 5. Have you looked for and found no other adverse of | | Y N Y N | U | N/A N/A | | |
| Is the intent of all the caveats met for Reference Spectru | m? | Y N | U | N/A | | |

SEWS 8.2.9 (2 of 3) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | |
|---|--|---------------------|-------------|-------------|-------------|------------|--|
| Equipment ID No.: Equipment Class: Air Handlers | | | | | | | |
| Equip | oment description: | | | | | | |
| Anc | horage (Chapter 6) | | | | | | |
| 1. | Type of anchorage: | | | | | | |
| | expansion anchor cast-in-place bolt or headed cast-in-place J-bolt grouted-in-place bolt welds to embedded steel or lead cinch anchors Other N/A (no further anchorage of | n exposed steel | | | | | |
| | 14/7 (no faither anchorage t | considerations) | | | | | |
| 2. 3. 4. 5. | Appropriate characteristics for anchorage ty (size, location, equipment characteristics) Gap at threaded anchor less than 1/4 inch Base stiffness and no significant prying action Equipment base strength and structural load | on requirements met | Y Y Y | N N N | U U U | N/A | |
| 6. 7. 8. 9. | Embedment steel and pads requirements m Embedment length requirements met Anchor spacing requirements met Edge distance requirements met | | Y Y Y | N N N | U U U | N/A | |
| 10. 11. 12. 13. | Concrete strength requirements met Concrete crack requirements met Equipment with essential relays requiremen Installation adequacy requirements met | its met | Y Y Y | N N N | U U U | N/A N/A | |
| 14. | No other concerns | | Ý | N | Ü | 14// (| |
| | anchorage capacity exceed demand? | | Y | N | U | | |
| Inte | raction Effects (Chapter 7) | | | | | | |
| 1. | Soft targets free from impact by nearby equ or structures | | Υ | N | U | N/A | |
| 2. | If equipment contains sensitive essential rel from all impact by nearby equipment or st | • • • | Υ | N | U | N/A | |
| 3. 4. | Attached lines have adequate flexibility No collapse of overhead equipment, distribu | | Y | N | U | N/A | |
| 5. | or masonry walls Equipment is free from credible and significates seismic-induced flood and spray concerns | | Y Y | N N | U | N/A N/A | |
| 6. | No credible seismic-induced fire concerns | | Υ | Ν | | N/A | |
| 7. 8. | No other "two over one" concerns as defined No other concerns | d in DOE-STD-1021 | Y Y | N N | U | N/A N/A | |
| Is equ | uipment free of interaction effects? | | Υ | N | U | | |

SEWS 8.2.9 (3 of 3) Sheet 3 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | |
|--|---|------------------|--------------------|-----------------|-------|--|--|
| Equip | Equipment ID No.: Equipment Class: Air Handlers | | | | | | |
| Equipn | nent description: | | | | | | |
| Comi | ments | | | | | | |
| Screen | ning Walkdown(s | s): | | | | | |
| | <u>Date</u> | <u>Time</u> | Team Members | | | | |
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| Reco | mmend Reso | olution | | | | | |
| | Maintenance a | action: | | | | | |
| | Further evalua | tion: | | | | | |
| | Retrofit design | : | | | | | |
| | Other: | | | | | | |
| | No further action | on required. Equ | uipment is seismic | cally adequate. | | | |
| All asp | ects of the equip | oment's seismic | adequacy have be | een addressed. | | | |
| Evalua | tion by: | | | | Date: | | |
| (All tea | ım members) | | | | | | |
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SEWS 8.2.10 (1 of 3) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | | | | | |
|--|--|------|--------|--------|-------------------|--|--|
| Equipment ID No.: | Equipment Class: Fans | | | | | | |
| Equipment description: | | | | | | | |
| Equipment Location: Bldg. | Floor El. | Roon | n, Ro | w/Co | l. | | |
| Weight: | | | | | | | |
| Drawing No.: | Performance Category: | | | | | | |
| Functionality Requirement | | | | | | | |
| ☐ For components whose function or structural integr | For components whose function or structural integrity is required, complete all sections of this form. | | | | | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | | | | |
| 1. Seismic Capacity based on: Reference Spectrum GERS Existing documentation 2. Elevation where equipment receives seismic input Seismic Demand Spectrum (SDS) based on: In-structure response spectrum (IRS) per DOE-STD-1020 Other in-structure response spectrum (determine appropriate experience data scale factor) Design basis earthquake (DBE) per DOE-STD-1020 Other Scale Factor (SF) Experience Data Factor (F _{ED}) | | | | | | | |
| Reference: | | | | | | | |
| Caveats (Section 8.2.10) Reference Spectrum (Identify with an asterisk (*) those caveats which are met by intent without meeting the specific wording of the caveat rule and explain the reason for this conclusion in the COMMENTS section below) 1. Equipment is included in earthquake experience equipment class Y N U N/A 2. Drive motor and fan mounted on common base Y N U N/A 3. For axial fan with long shaft between fan and motor, shaft supported at fan as well as motor Y N U N/A | | | | | | | |
| No possibility of excessive duct distortion causing or misalignment of fan Have you looked for and found no other adverse of the intent of all the caveats met for Reference Spectrum | concerns? | Υ Ι | N N | U U | N/A N/A N/A | | |

SEWS 8.2.10 (2 of 3) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | |
|---|-----------------------------|--|----------------|--------|--------|--------|------------|
| Equipment ID No.: Equipment Class: Fans | | | | | | | |
| Equipm | nent description: | | | | | | |
| | orage (Chapter | | | | | | |
| 1. | Type of anchor | | | | | | |
| 1. | Type or anchor | expansion anchor cast-in-place bolt or headed stud cast-in-place J-bolt grouted-in-place bolt welds to embedded steel on exp lead cinch anchors Other N/A (no further anchorage consider | osed steel | | | | |
| 2. | Appropriate cha | aracteristics for anchorage type ch | necked | | | | |
| | • | n, equipment characteristics) | | Υ | N | U | |
| 3. | | d anchor less than 1/4 inch | | Y | N | U | N/A |
| 4. 5. | | and no significant prying action re e strength and structural load patl | | Y Y | N N | U U | |
| 6. | | eel and pads requirements met | Tadoquato | Ϋ́ | N | Ü | N/A |
| 7. | | ngth requirements met | | Υ | Ν | Ū | |
| 8. | | requirements met | | Υ | Ν | U | |
| 9. | | requirements met | | Υ | Ν | U | |
| 10. | | gth requirements met | | Y | N | U | |
| 11. 12. | | requirements met | ^ 4 | Y Y | N N | U U | N/A |
| 12. 13. | | n essential relays requirements me quacy requirements met | 2 l | Ϋ́ | N | U | N/A N/A |
| 14. | No other conce | | | Ϋ́ | N | Ü | IN/A |
| Does a | | ity exceed demand? | | Y | N | U | |
| Intera | action Effects | (Chantar 7) | | | | | |
| 1. | | e from impact by nearby equipmen | nt | | | | |
| •• | or structures | Julian impact by meanby equipmen | ••• | Υ | Ν | U | N/A |
| 2. | | ontains sensitive essential relays, | equipment free | | | | |
| | | ct by nearby equipment or structu | res | Υ | Ν | U | N/A |
| 3. | | have adequate flexibility | | Υ | Ν | U | N/A |
| 4. | No collapse of or masonry w | overhead equipment, distribution : | systems, | Υ | N | | N/A |
| 5. | | ee from credible and significant | | ī | IN | | IN/A |
| 0. | | ced flood and spray concerns | | Υ | Ν | U | N/A |
| 6. | | smic-induced fire concerns | | Υ | Ν | | N/A |
| 7. | No other "two o | over one" concerns as defined in E | OOE-STD-1021 | Υ | Ν | | N/A |
| 8. | No other conce | rns | | Y | N | U | N/A |
| Is equipment free of interaction effects? Y N U | | | | | | | |

SEWS 8.2.10 (3 of 3) Sheet 3 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | |
|--|-------------------|-----------------|--------------------|-----------------------|-------|--|
| Equip | ment ID No.: | | | Equipment Class: Fans | | |
| | nent description: | | | | | |
| Comi | ments | | | | | |
| Screen | ning Walkdown(s | 3): | | | | |
| | <u>Date</u> | <u>Time</u> | Team Members | | | |
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| Reco | mmend Rese | olution | | | | |
| | Maintenance a | action: | | | | |
| | Further evalua | | | | | |
| | | | | | | |
| | Retrofit design | : | | | | |
| | Other: | | | | | |
| | No further action | on required. Eq | uipment is seismic | cally adequate. | | |
| All asp | ects of the equip | oment's seismic | adequacy have be | een addressed. | | |
| Evalua | tion by: | | | | Date: | |
| (All tea | ım members) | | | | | |
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SEWS 9.1.2 (1 of 4) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | | | | |
|---|--|--------------------------------|--------|--------|----------|------|
| Equipme | Equipment ID No.: Equipment Class: Horizontal Tanks and Heat Exchangers | | | | | |
| Equipme | nt description: | | | | | |
| Equipme | nt Location: Bldg. | Floor El. | Roc | m, Ro | w/Col | |
| Manufact | turer, model, etc.: | | | | | |
| Approxim | nate weight: | | | | | |
| Drawing | No.: | Performance Category: | | | | |
| Functio | onality Requirement | | | | | |
| ☐ For | ntact Lead Relay Reviewer to determine if item or components whose function or structural integral all other components, only anchorage evaluation | rity is required, complete all | l sect | ions o | f this f | orm. |
| Caveat | S (Section 9.1.2) | | | | | |
| (Identify with an asterisk (*) those steps which are met by intent without meeting the specific wording of the step and explain the reason for this conclusion in the COMMENTS section below) | | | | | | |
| Step 1 Parameters and values within range of applicable parameters Y N U N/A | | | | | | |
| Step 2 | p 2 Anchor bolt tension and shear load allowables determined Y N U N/A | | N/A | | | |
| Step 3 | 3 Base plate bending strength reduction factor (RB) determined Y N U N/A | | N/A | | | |
| Step 4 | Base plate weld strength reduction factor (RW) | determined | Y | N | U | N/A |
| Step 5 | p 5 Anchorage tension allowable determined using strength reduction factors Y N U N/A | | | | N/A | |
| Step 6 | Ratios and values calculated | | Y | N | U | N/A |
| Step 7 | 7 Acceleration capacity of tank anchorage determined Y N U N/A | | N/A | | | |
| Step 8 | 3 Flexibility of tank in transverse and vertical directions determined Y N U N/A | | N/A | | | |
| Step 9 | Flexibility of tank in longitudinal direction determ | mined | Y | N | U | N/A |
| Step 10 | 0 Capacity acceleration exceeds seismic demand acceleration Y N U N/A | | N/A | | | |
| Step 11 | 1 Saddle stresses checked Y N U N | | N/A | | | |

SEWS 9.1.2 (2 of 4) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|---|--|---|---|--|--|
| Equipment ID No.: Equipment Class: Horizontal Tanks and Heat Exchangers | | | | | |
| | • | | | | |
| | | | | | |
| posed steel | | | | | |
| Other N/A (no further anchorage considerations) 2. Appropriate characteristics for anchorage type checked (size, location, equipment characteristics) 3. Gap at threaded anchor less than 1/4 inch 4. Base stiffness and no significant prying action requirements met 5. Equipment base strength and structural load path adequate 6. Embedment steel and pads requirements met 7. Embedment length requirements met 8. Anchor spacing requirements met 9. Edge distance requirements met 9. Edge distance requirements met 10. Concrete strength requirements met 11. Concrete crack requirements met 12. Equipment with essential relays requirements met 13. Installation adequacy requirements met 14. No other concerns 15. V N U 16. Does anchorage capacity exceed demand? 16. V N U 17. V N U 18. V N U 19. Does anchorage capacity exceed demand? 19. V N U 19. Does anchorage capacity exceed demand? 20. V N U 21. V N U 22. Capacity exceed demand? 23. V N U 24. V N U 25. V N U 26. V N U 27. V N U 28. V N U 29. Edge distance requirements met 29. V N U 30. V N V 31. Installation adequacy requirements met 30. V N U 31. V N U 32. V N U 33. Installation adequacy requirements met 34. V N U 35. V N U 36. V N U 37. V N U 38. V N U 39. V N U 39. V N U 40. V N U 41. V N U | | | N/A N/A | | |
| | | | | | |
| Interaction Effects (Chapter 7) | | | | | |
| equipment free res Y | N N | U | N/A N/A N/A | | |
| • | N N | U | N/A N/A | | |
| | Equipment Class: Horizon Heat Exception of the equipment free res Y systems, | Equipment Class: Horizontal Tan Heat Exchange danchor dosed steel derations) necked YN NYN NYN NYN NYN NYN NYN NYN NYN NYN | Equipment Class: Horizontal Tanks and Heat Exchangers dianchor dianchor derations) necked Y N U Systems, | | |

SEWS 9.1.2 (3 of 4) Sheet 3 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | |
|--|--------------|------------|-----|-------------------|
| Equipment ID No.: Equipment Class: Horizontal Tanks and Heat Exchangers | | | d | |
| Equipment description: | | | | |
| Interaction Effects (Cont.) | | | | |
| No credible seismic-induced fire concerns No other "two over one" concerns as defined in I No other concerns | OOE-STD-1021 | / N / N | 1 | N/A N/A N/A |
| Is equipment free of interaction effects? | , | / N | l U | |
| Comments | | | | |
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SEWS 9.1.2 (4 of 4) Sheet 4 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | |
|--|-----------------------------|------------------------|--------------------------------|
| Equipment ID No.: | | Equipment Class: Horiz | zontal Tanks and Exchangers |
| Equipment description: | | | |
| Comments (Cont.) | | | |
| Screening Walkdown(s): | | | |
| <u>Date</u> <u>Time</u> | Team Members | <u>1</u> | |
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| Recommend Resolutio | n | | |
| ☐ Maintenance action: | | | |
| ☐ Further evaluation: | | | |
| ☐ Retrofit design: | | | |
| ☐ Other: | | | |
| ☐ No further action requ | uired. Equipment is seismic | cally adequate. | |
| All aspects of the equipment's | seismic adequacy have be | een addressed. | |
| Evaluation by: | | | Date: |
| (All team members) | | | |
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SEWS 9.2.1 (1 of 6) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | |
|--|--|-----------|--|
| Equipment ID No.: | Equipment Class: Cable and Conduit Raceway Systems | | |
| Cable tray/Conduit identification: | | | |
| Systems: | | | |
| Building: | Floor El. (S): | Location: | |
| Performance Category: | | | |
| Tray System or Conduit Boundary | | | |
| Cable tray/Conduit description: | | | |
| Description or sketch (attach sheets as necessary): | | | |
| Functionality Requirement | | | |
| ☐ Maintain electrical cable function ☐ Maintain position | | | |

SEWS 9.2.1 (2 of 6) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | |
|---|--|--------|-----|-----|
| Equipment ID No.: Equipment Class: Cable and Conduit Race Systems | | aceway | | |
| Cable tray/Conduit identification: | | | | |
| Systems: | | | | |
| Seismic Capacity vs. Demand (Chapter 5) | | | | |
| Seismic Capacity based on: Reference Spectrum GERS Existing documentation Elevation where equipment receives seismic input | | | | |
| | erience Data Factor (F _{ED}) | | | |
| Does capacity exceed demand? | Y | N | U | |
| Reference: | | | | |
| Inclusion Rules Review (Section 9.2.1) | | | | |
| Cable tray spans | Υ | N | U | N/A |
| 2. Conduit spans | Υ | N | U | N/A |
| 3. Tie downs Y N U N/A | | | N/A | |
| 4. Channel nuts | Υ | N | U | N/A |
| 5. Rigid boots | Υ | N | U | N/A |
| 6. Beam clamps Y N U N/A | | | | |
| 7. Cast-iron inserts | Υ | N | U | N/A |

SEWS 9.2.1 (3 of 6) Sheet 3 of _____

| | SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | |
|----------|--|-------------------|--------|-----|------------|
| Equip | Equipment ID No.: Equipment Class: Cable and Conduit Raceway Systems | | | | |
| Cable | tray/Conduit identification: | | | | |
| Syster | ns: | | | | |
| Gene | eral Walkdown Review (Section 9.2.1) | | | | |
| 1. | Anchor bolts | Υ | N | U | N/A |
| 2. | Concrete condition | Υ | N | U | N/A |
| 3. | Corrosion | Υ | N | U | N/A |
| 4. | Sagging raceways | Υ | N | U | N/A |
| 5. | Broken or missing components | Υ | N | U | N/A |
| 6. | Restraint of cables | Υ | N | U | N/A |
| 7. | Aging of plastic ties | Υ | N | U | N/A |
| 8. | System hardspots | Y | N | U | N/A |
| | Welded connections | Υ | N | U | N/A |
| | Components and sharp edges | Υ | N | U | N/A |
| | Bare cables | Υ | N | U | N/A |
| | Cable fill/ties | Υ | N | U | N/A |
| | Short rods | Υ | N | U | N/A |
| Intera | action Effects (Chapter 7) | | | | |
| 1. | Soft targets free from impact by nearby equipme | | | | |
| _ | or structures | Y | N | U | N/A |
| 2. | If equipment contains sensitive essential relays, from all impact by nearby equipment or structu | | N | U | N/A |
| 3. | Attached lines have adequate flexibility | Y | N | Ü | N/A |
| 4. | No collapse of overhead equipment, distribution | systems, | | | |
| | or masonry walls | Υ | Ν | | N/A |
| 5. | Equipment is free from credible and significant | ., | | | N1/A |
| | seismic-induced flood and spray concerns | Y | N | | N/A |
| 6. | No credible seismic-induced fire concerns | Υ 205 STD 4024 | N | | N/A |
| 7. 8. | No other "two over one" concerns as defined in I No other concerns | DOE-STD-1021 Y | N N | 1.1 | N/A N/A |
| | | | | U | IN/A |
| Is equi | Is equipment free of interaction effects? Y N U | | | | |

SEWS 9.2.1 (4 of 6) Sheet 4 of _____

| SCREENING EVALUATION W | ORK SHEET (SEWS) (Cont.) |
|-------------------------------------|--|
| Equipment ID No.: | Equipment Class: Cable and Conduit Raceway Systems |
| Cable tray/Conduit identification: | |
| Systems: | |
| Analytical Review Support Selection | |
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SEWS 9.2.1 (5 of 6) Sheet 5 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | |
|--|--|--|--|
| Equipment ID No.: | Equipment Class: Cable and Conduit Raceway Systems | | |
| Cable tray/Conduit identification: | | | |
| Systems: | | | |
| Analytical Review Data Sheet | | | |
| Room No.: Selection | on No.: | | |
| Location: | | | |
| Description and Sketch: | | | |
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| Additional Notes: | | | |
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SEWS 9.2.1 (6 of 6) Sheet 6 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | |
|--|--|--|--|
| Equipment ID No.: | Equipment Class: Cable and Conduit Raceway Systems | | |
| Cable tray/Conduit identification: | | | |
| Systems: | | | |
| Comments | | | |
| Screening Walkdown(s): | | | |
| <u>Date</u> <u>Time</u> <u>Tea</u> | m Members | | |
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| Recommend Resolution | | | |
| ☐ Maintenance action: | | | |
| ☐ Further evaluation: | | | |
| Retrofit design: | | | |
| Other: | | | |
| ☐ No further action required. Equipme | nt is seismically adequate. | | |
| All aspects of the equipment's seismic adequ | acy have been addressed. | | |
| Evaluation by: | Date: | | |
| (All team members) | | | |
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SEWS 10.1.1 (1 of 3) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | |
|---|-------------------------------------|--|--|
| Piping System ID No.: | Equipment Class: Piping | | |
| Performance Category: | | | |
| System Description and Fluid Boundaries: | | | |
| | | | |
| Piping System Function and Contents | | | |
| Operability Pressui | re Boudary Position Retention | | |
| Piping Layout and Structural Boundaries Piping System Location and Reference Dray | vings | | |
| | | | |
| Piping Materials and Sizes | | | |
| | | | |
| Weights | | | |
| | | | |
| Concurrent Pressure and Temperature | | | |
| | | | |
| Input Response Spectra and SAM-Reference | | | |
| Final | Preliminary | | |
| Applicability Ductile material D/t<50 | -20°F ≤ T ≤ 250°F Reference Spectra | | |

SEWS 10.1.1 (2 of 3) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | |
|--|---|-------|--|
| Piping System ID No.: | Piping System ID No.: Equipment Class: Piping | | |
| Screening Criterion (Section 10.1.1) | Screening Criterion Met | Notes | |
| Construction: Piping, components and supports shall be undamaged and of good construction. | | | |
| Internal Degradation: Piping and components shall be free of signigicant internal degradation. | | | |
| External Corrosion: Piping, components and supports shall be free of significant external corrosion. | | | |
| Vertical Span: Piping shall be well supported vertically. | | | |
| Lateral Span: Piping shall be sufficiently restrained in the lateral direction. | | | |
| Anchor Motion: Piping shall have sufficient flexibility to accommodate the seismic motions of structures, equipment and headers to which it is attached. | | | |
| Mechanical Joints: Piping shall not contain mechanical joints which rely solely on friction. | | | |
| Flanged Joints: Flanged joints shall withstand the expected seismic moments without leakage. | | | |
| Equipment Nozzle Loads: Equipment shall not be subjected to large seismic loads from the piping systems. | | | |
| Eccentric Weights: Eccentric Weights in piping systems shall be evaluated. | | | |
| Flexible Joints: Flexible joints shall be properly restrained to keep relative end movements within vendor limits. | | | |
| Evaluation of Pipe Supports: Pipe supports shall be capable of withstanding seismic loads without failure. | | | |
| Interaction with Other Components: The piping being reviewed shall not be a source of interactions by displacement or swing impact on adjacent components. | | | |
| No other concerns | | | |
| | | | |

SEWS 10.1.1 (3 of 3) Sheet 3 of _____

| | SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | |
|--------|--|----------------|-----------------|---------------------------------------|-------|--|--|
| Piping | g System ID No.: | | | Equipment Class: Piping | | | |
| Com | ments | | | | | | |
| Scree | ning Walkdown(s): | : | | | | | |
| | <u>Date</u> | <u>Time</u> | Team Member | <u>'S</u> | | | |
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| Reco | ommend Resol | lution | | | | | |
| | Maintenance act | | | | | | |
| | Further evaluation | | | | | | |
| | Retrofit design: | | | | | | |
| | Other: | | | | | | |
| | | | | · · · · · · · · · · · · · · · · · · · | | | |
| | No further action | | | | | | |
| | pects of the equipm | nent's seismic | adequacy have l | been addressed. | Б., | | |
| | ation by: am members) | | | | Date: | | |
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SEWS 10.4.1 (1 of 4) Sheet 1 of _____

| SCREENING EVALU | JATION | WORK SHEET | (SEWS) | | | |
|--|---------------------------------|-------------------------|----------------------------|---------------------------------------|-------------|---|
| Equipment ID No.: | | Equipment Class: | HVAC Du | icts | | |
| HVAC line identification: | | | | | | |
| System: | T | | | | | |
| Building: | Floor El. | (s): | Location: | | | |
| Operating Pressure: | PSIG | | Inches of | water | • | |
| Performance Category: | | | | | | |
| Duct System Boundary | | | | | | |
| Description or sketch (attach sheets as necessar | ary): | | | | | |
| 1. During seismic event 2. After seismic event | | | Y Y | N N | U | |
| | | | | | | |
| Structural Integrity Review (Section 10.4 | 1.1) | | | | | |
| Duct free of damage, defects, and degraded Industry standard duct material and stiffed Industry standard duct joints are utilized Support spans satisfy the criteria Ducts are properly tied-down to the supporting Heavy in-line equipment is adequately restricted Appurtenances are positively attached to No stiff branch with flexible header No other concerns Are the above caveats met? | eners are u orts strained | utilized | Y Y Y Y Y Y | N N N N N N N N N N N N N N N N N N N | ט טטטטטטטטט | N/A N/A N/A N/A N/A N/A N/A |

SEWS 10.4.1 (2 of 4) Sheet 2 of _____

| | SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | |
|----------------------------------|---|----------------------|-----------------------|-----------------------|------------------|---------------------------------|
| Equi | pment ID No.: | Equipment Class: HVA | \C Du | cts | | |
| HVA | C line identification: | | | | | |
| Syste | em: | | | | | |
| Pre | ssure Boundary Integrity Review (Section 10 | 0.4.1) | | | | |
| | Is any pressure boundary integrity required? If the answer to the above question is NO, SKIP THI | S SECTION | Υ | N | U | |
| 1. 2. 3. 4. 5. 6. | Duct joints are rugged Stiffener spacings are within the guidelines Bolted flanged joints satisfy SMACNA (Tables G and No point supported round duct Flexible bellows can accomodate motions No additional concerns Are the above caveats met? | d H) requirements | Y Y Y Y Y | 22222 | U U U U U | N/A N/A N/A N/A N/A |
| Sup | pport Review (Section 10.4.1) | | | | | |
| 1. 2. 3. 4. 5. | Beam Clamps are oriented to preclude slipping off the nuts have teeth or ridges, and no cast-iron inserts Support memeber capacity exceeds demand Does the anchorage appear adequate? No broken or obviously defective hardware No additional concerns Are the above caveats met? | ne support, channel | Y Y Y Y Y | N N N N N | U U U U | N/A N/A N/A N/A |
| Inte | raction Effects (Chapter 7) | | | | | |
| 1. 2. | Soft targets free from impact by nearby equipment or structures If equipment contains sensitive essential relays, end from all impact by nearby equipment or structure | quipment free | Y Y | N N | U | N/A N/A |
| 3. 4. | Attached lines have adequate flexibility No collapse of overhead equipment, distribution sy or masonry walls | ystems, | Y Y | N N | U | N/A N/A |
| 5. 6. 7. 8. Is eq | Equipment is free from credible and significant seismic-induced flood and spray concerns No credible seismic-induced fire concerns No other "two over one" concerns as defined in DC No other concerns uipment free of interaction effects? | DE-STD-1021 | Y Y Y Y | N N N N | U U | N/A N/A N/A N/A |
| | | | | | | |

SEWS 10.4.1 (3 of 4) Sheet 3 of _____

| SCREENING EVALUATION W | ORK SHEET (SEWS) | (Cor | nt.) | | |
|---|-----------------------|-------|------|---|-----|
| Equipment ID No.: | Equipment Class: HVAC | C Duc | cts | | |
| HVAC line identification: | | | | | |
| System: | | | | | |
| Bounding Candidate Evaluation | | | | | |
| Duct is not a candidate for bounding calculations | | Υ | N | U | N/A |
| Discussion: | | | | | |
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| Analytical Review | | | | | |
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SEWS 10.4.1 (4 of 4) Sheet 4 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | | |
|--|-----------------------------|--|--|--|--|--|--|
| Equipment ID No.: | Equipment Class: HVAC Ducts | | | | | | |
| HVAC line identification: | | | | | | | |
| System: | | | | | | | |
| Comments | Comments | | | | | | |
| Screening Walkdown(s): | | | | | | | |
| <u>Date</u> <u>Time</u> | <u>Team Members</u> | | | | | | |
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| Recommend Resolution | | | | | | | |
| ☐ Maintenance action: | | | | | | | |
| ☐ Further evaluation: _ | | | | | | | |
| Retrofit design: | | | | | | | |
| Other: | | | | | | | |
| ☐ No further action required. Equipment is seismically adequate. | | | | | | | |
| All aspects of the equipment's seismic adequacy have been addressed. | | | | | | | |
| | Date: | | | | | | |
| (All team members) | | | | | | | |
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SEWS 10.X.X (1 of 2) Sheet 1 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) | | | | | | |
|---|----------|------------------|-----------|--------|--------|--|
| ID No.: | | Equipment Class: | | | | |
| Building: | | | | | | |
| Performance Category: | Floor El | . (s): | Location: | | | |
| Description or Sketch | | | | | | |
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| Functionality Requirement | | | | | | |
| During seismic event After seismic event | | | Y Y | N N | U U | |

SEWS 10.X.X (2 of 2) Sheet 2 of _____

| SCREENING EVALUATION WORK SHEET (SEWS) (Cont.) | | | | | | |
|--|------------------|--------------|------------------------|------------------|-----------|--|
| ID No.: | : | | | Equipment Class: | | |
| Buildin | g: | | Floor E | | Location: | |
| Comi | ments | | | | | |
| Screen | ning Walkdown(| s): | | | | |
| | <u>Date</u> | <u>Time</u> | Team Members | <u>s</u> | | |
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| Reco | mmend Res | olution | | | | |
| | Maintenance a | | | | | |
| | Further evalua | ation: | | | | |
| | Retrofit design | າ: _ | | | | |
| | Other: | _ | | | | |
| | No further acti | ion required | l. Equipment is seismi | cally adequate. | | |
| All asp | ects of the equi | pment's sei | smic adequacy have b | een addressed. | | |
| Evaluation by: | | | Date: | | | |
| (All tea | am members) | | | | | |
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OSES (1 of 3) Sheet 1 of _____

OUTLIER SEISMIC EVALUATION SHEET (OSES)

| 1. | I, AND LOCATION | |
|----|---|--|
| | SEWS Form | |
| | Equipment ID Number | Equipment Class |
| | Equipment Location: Building | Floor Elevation |
| | Room or Row/Column | Base Elevation |
| | Equipment Description | |
| | | |
| | Performance Category | - |
| 2. | OUTLIER ISSUE DEFINITION | |
| | Identify all the screening guidelines which guidelines could not be satisfied.) | h are not met. (Check more than one if several |
| | Mechanical and Electrical Equipment | Tanks and Heat Exchangers |
| | Seismic Capacity vs. Demand | Caveats |
| | Reference Spectrum Caveats | Anchorage |
| | GERS Caveats | Interaction Effects |
| | Anchorage | Other |
| | Interaction Effects | _ |
| | Other | _ |
| | Essential Relays | Cable and Conduit Raceway Systems |
| | Seismic Capacity vs. Demand | Seismic Capacity vs. Demand |
| | Interaction Effects | Inclusion Rules Review |
| | Mounting, Type, Location | General Walkdown Review |
| | Other | Interaction Effects |
| | | Analytical Review |
| | | |

Other

OSES (2 of 3) Sheet 2 of _____

OUTLIER SEISMIC EVALUATION SHEET (OSES) (Cont.)

| | Piping | HVAC Ducts |
|----|---|---|
| | Screening Criterion | Structural Integrity Review |
| | Other | Pressure Boundary Integrity Review |
| | | Support Review |
| | | Interaction Effects |
| | | Analytical Review |
| | | Other |
| b. | Describe all the reasons for the outlier (i.e., signatories would consider this item of equip | if all the listed outer issues were resolved, then the pment to be evaluated for seismic adequacy): |
| | | |
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| | | |
| PR | OPOSED METHOD OF OUTLIER RESOLU | TION |
| a. | Define proposed method(s) of resolving out | lier: |
| | | |
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| | | |

3.

OSES (3 of 3) Sheet 3 of _____

OUTLIER SEISMIC EVALUATION SHEET (OSES) (Cont.)

| Э. | Provide information needed to implement proposed method(s) for resolving outlier: | | | | |
|----|---|--|--|--|--|
| | | | | | |
| | | | | | |
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| c. | Provide information on potential hardware upgrades: | | | | |
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SEDS (1 of 2) Sheet 1 of _____

| SCREENING EVALUATION DATA SHEET (SEDS) | | | | | | | |
|--|-------------------------|--|--------------|-----------------------|---------------------------|----------------------|-----------------------------|
| Equip. Class (1) | Equip. ID No. (2) | System/Equipment Description (3) | Bldg. (4) | Floor Elev. (5) | Room or Row/Col (6) | Base Elev. (7) | Capacity Spectrum (8) |
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SIGNATURES:

All the information contained on this Screening Evaluation Data Sheet (SEDS) is, to the best of our knowledge and belief, correct and accurate. "All information" includes each entry and conclusion (whether evaluated to be seismically adequate or not).

| Approved: | All Seismic Capability Engineers on the Seismic Review Team should sign. | | | | | |
|-----------|--|-----------|----------|--|--|--|
| Print o | r Type Name | Signature | Date | | | |
| Print o | r Type Name | Signature | Date | | | |
| Print o | r Tvpe Name | Signature | Date | | | |

SEDS (2 of 2) Sheet 2 of _____

| SCREENING EVALUATION DATA SHEET (SEDS) (Cont.) | | | | | | | |
|--|-----------------------------|----------------------------------|--------------------------------|---------------------------------|--------------------------------|----------------------------------|---------------------|
| F _{ED} (9) | Demand Spectrum (10) | Cap > Demand? (11) | Caveats OK? (12) | Anchorage OK? (13) | Interact. OK? (14) | Equipment OK? (15) | Notes (16) |
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| ADDITIO | ONAL SIGNA | TURES: | | | | | |
| The info equipme | rmation provident contained | ded to the Seismon this SEDS is, | ic Capability to the best o | Engineers regar our knowledg | arding syster le and belief | ms and operation, correct and ac | ons of the ccurate. |
| Approve | | ature(s) of System | | | are required | d if the Seismic | Capability |

| Engineers deem it nece | essary. | |
|------------------------|-----------|------|
| Print or Type Name | Signature | Date |
| Print or Type Name | Signature | Date |
| Print or Type Name | Signature | Date |